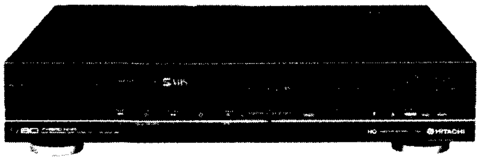
HITACHI

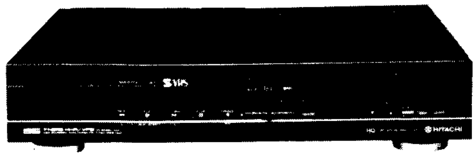
SERVICE MANUAL

TK No.2963E

VT-S80E(CT)
VT-S85E(VPS)

Technical Data





SPECIFICATIONS

Format:	S-VHS PAL Standard
Recording:	Rotary Two-Head Helical Scan Azimuth Recording
Tape Speed:	23.39 mm/sec. (SP mode), 11.7 mm/sec. (LP mode)
Tape Width:	12.7 mm
Operation Temperature:	5°C to 40°C
Video:	PAL colour (system B & G) & CCIR monochrome signals 625 lines
Recording Time:	240 min. (SP mode)/480 min. (LP mode)....with E-240 cassette
Aerial Input:	VHF channels 2 — 12 VHF channels U1 — U5 CATV channels S1 — S20 HYPER S21 — S41 UHF channels 21 — 69
RF Output:	UHF channels 37 (30 — 39 adjustable) (System G)
Video Input:	VIDEO IN : 0.5 to 1.5Vp-p 75 ohm Unbalanced S-VHS IN Y: 0.5 to 1.5Vp-p, 75 ohm Unbalanced C: 0.3Vp-p, 75 ohm Unbalanced
Video Output:	VIDEO OUT : 1Vp-p 75 ohm Unbalanced S-VHS OUT Y: 1Vp-p, 75 ohm Unbalanced C: 0.3Vp-p, 75 ohm Unbalanced
S/N Ratio (Video):	More than 43 dB
Horizontal Resolution:	Colour 260 lines
Audio (Linear)	
Input:	−7.8 dBs 50 Kohm
Output:	−7.8 dBs 1 Kohm
S/N Ratio:	43 dB
Frequency Range:	70 Hz to 12 kHz
Hi-Fi Audio	
Frequency Range:	20 Hz to 20 kHz
Dynamic Range:	More than 90 dB
Wow and Flutter:	Less than 0.005% WRMS
Power:	AC 220V 50 Hz
Power Consumption:	49W (including timer)
Timer:	24 hour digital indication
Cabinet Size:	435 mm(W) x 92 mm(H) x 375 mm(D)
Weight:	Approx. 8.5 kg
Accessories Included:	1 — Aerial cable 1 — Infrared remote control unit 1 — Audio cable 1 — S-Connector cable 2 — Batteries

* Design and specifications are subject to change without notice.

VHS

This video deck is a VHS type video recorder. For proper operation, only the VHS type cassette must be used.

Manuals related to the VT-S80E(CT)/VT-S85E(VPS)

Name of Manual	Language	Manual No.	Chapters included
Technical Data	English	2963E	Chapter 1−6
	Deutsch	2964G	Kapitel 1−6
Technical Information	English	2965E	−
	Deutsch	2966G	−

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

VIDEO CASSETTE RECORDER

March 1989 TOKAI WORKS

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SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers' parts! Critical parts are marked ⚠ in the schematic diagrams.
2. Before returning a repaired unit to the customer, the servicing technician must thoroughly test the unit to assertain that it is completely safe to operate without danger of electrical shock.

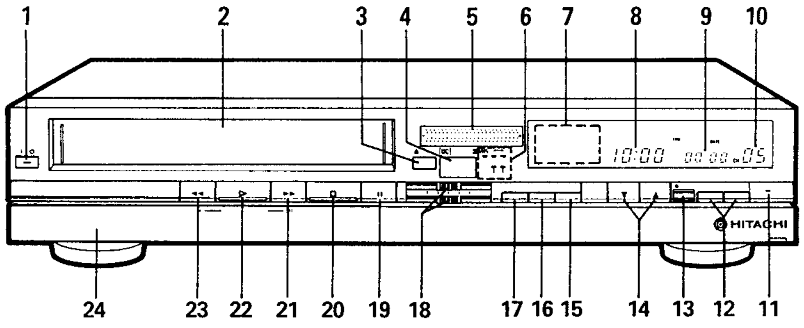
COMPARISON WITH PREVIOUS MODEL

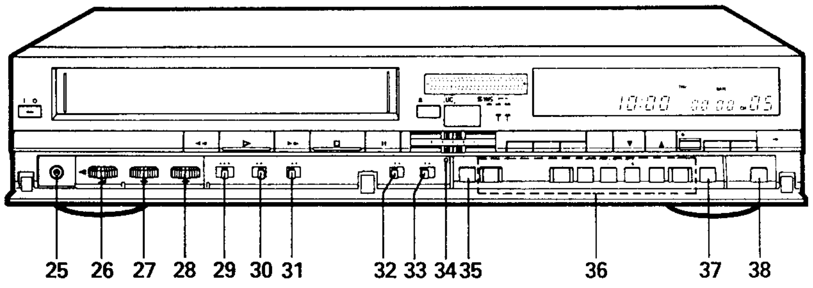
ITEM	VT-S80E(CT)/VT-S85E(VPS)	VT-580E(CT)/VT-585E(VPS)
FEATURES		
RECORDING FORMAT	S-VHS/VHS	VHS
VIDEO SIGNAL SYSTEM	PAL	PAL
TUNER SYSTEM	I PAL	I PAL
TUNING SYSTEM	FREQUENCY SYNTHESIZER (AUTO TUNING)	FREQUENCY SYNTHESIZER (AUTO TUNING)
RESET CHANNEL	69CH	69CH
TIMER RECORDING	8 PROGRAMMES/1 YEAR	8 PROGRAMMES/1 YEAR
TIMER BACK-UP	15 MIN.	15 MIN.
INSTANT RECORDING TIMER	PROVIDED	PROVIDED
VISUAL SEARCH SPEED	SP:×5, ×9 LP:×9, ×18	SP:×5, ×9 LP:×9, ×18
SLOW PLAY	PROVIDED (VARIABLE SLOW)	PROVIDED (VARIABLE SLOW)
FRAME ADVANCE	PROVIDED (BY REMOTE CONTROL)	PROVIDED (BY REMOTE CONTROL)
VIDEO DUBBING	PROVIDED	PROVIDED
PICTURE CONTROL	PROVIDED	PROVIDED
AUDIO RECORDING SYSTEM	VHS Hi-Fi	VHS Hi-Fi
AUDIO DUBBING	PROVIDED	PROVIDED
Hi-Fi RECORDING CONTROL	PROVIDED	PROVIDED
SIMULCAST RECORDING	PROVIDED	PROVIDED
CATV/HYPER RECEIVED	POSSIBLE	POSSIBLE
BILINGUAL RECEIVED	POSSIBLE	POSSIBLE
INDEX	PROVIDED	PROVIDED
AUTO OPERATE ON	PROVIDED	PROVIDED
AUTO PLAY	PROVIDED	PROVIDED
AUTO REWIND SHUT OFF	PROVIDED	PROVIDED
ENDLESS PLAY	PROVIDED	PROVIDED
AUTO/COLOUR SWITCH	PROVIDED	PROVIDED
AUDIO AUTO/NORM. SWITCH	PROVIDED	PROVIDED
ON SCREEN DISPLAY	PROVIDED	PROVIDED
CAMERA PAUSE SOCKET	PROVIDED	PROVIDED
VIDEO PROGRAM SYSTEM (VPS)	VT-S85E(VPS) : PROVIDED VT-S80E(CT) : NOT PROVIDED	VT-585E(VPS) : PROVIDED VT-580E(CT) : NOT PROVIDED
DIGITAL TRICK PLAY	NOT PROVIDED	PROVIDED
DIGITAL EFFECT	NOT PROVIDED	PROVIDED
CHASSIS		
BASIC CHASSIS TYPE	Z TYPE	Z TYPE
VIDEO HEADS	5 HEADS + Hi-Fi SP:2 (+48μm/-48μm) LP:2 AMORPHOUS HEAD (+30μm/-30μm) Hi-Fi AUDIO:2(+23μm/-23μm) FLYING ERASE HEAD:1	3 HEADS + Hi-Fi SP:2 (+57μm/-57μm) TRICK PLAY:1 (-57μm) Hi-Fi AUDIO:2(+23μm/-23μm) FLYING ERASE HEAD:1
CAPSTAN DRIVE	DIRECT DRIVE	DIRECT DRIVE
CYLINDER MOTOR	THREE-PHASE OUTER ROTOR:360Hz	THREE-PHASE OUTER ROTOR:360Hz

COMPARISON OF MAIN CONTROL ICs

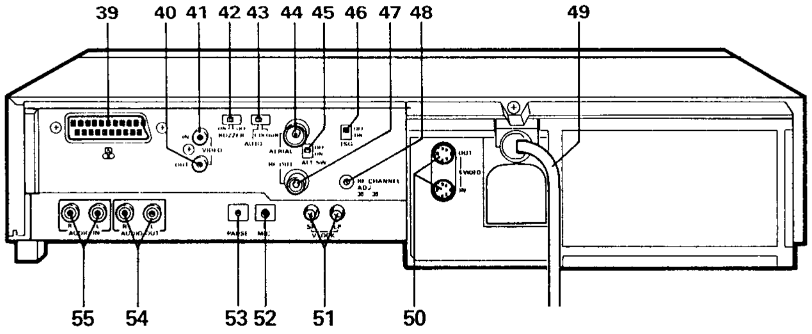
ITEM		VT-S80E(CT)/VT-S85E(VPS)	VT-580E(CT)/VT-585E(VPS)
VIDEO SYSTEM	Y. SIGNAL PROCESS	HT4927E (IC201)	HT4847F (IC201)
	S VHS DISCRI/FM EQUALIZER	HT7131C (IC202)	—
	SUB EMPHASIS	HT7124 (IC203)	—
	VIDEO EQUALIZER	HTS7129B (IC204)	—
	VERTICAL SAG CORRECT	HES8044B (IC205, IC405)	—
	TITLE ADDER	HES8068B (IC206)	—
	PICTURE CORRECTOR	—	HT4848B (IC202)
	DETAIL ENHANCER	—	HES8020A (IC204)
	CHROMA SIGNAL PROCESS	HT4909C (IC301)	HT4809 (IC301)
	SECAM DETECTOR	HES8074A (IC351)	BA7025L (IC351)
	ACC	BA7267S (IC352)	—
PRE/REC AMP	PRE/REC AMP	HA118021MP (IC1)	HA118017 (IC1)
	FM AUDIO PRE/REC AMP	HA12115MP (IC2)	HA12115MP (IC2)
Y/C SEPARATE	Y/CHROMINANCE SEPA.	HA118083NT (IC2201)	—
	IH DELAY	MS736 (IC2202)	HT-4664A (IC203)
	1/2 H SKEW DETECTOR	BA7023L (IC2302)	—
	CHROMA SKEW SWITCH	HA118099NT (IC2303)	—
	LUMINANCE SKEW SWITCH	HA118070 (IC2304)	—
	0.5H/0.5H/1H DELAY	PLT6230 (IC2309)	—
ON SCREEN DISPLAY	CHARACTER GEN.	PLT-623-0008 (IC1401)	M50455-003SP (IC1401)
	SYNC SEPARATOR		NJM2229S (IC1402)
	CHARACTER ADDER	HES8077 (IC1404)	—
JACK	VIDEO IN SELECT SW	BA7604 (IC1501)	LA7016 (IC1501-1504)
	TITLE SELECT SW	NJM2248S (IC1502)	—
	VIDEO/Y SELECT SW	LA7016 (IC1550)	—
AUDIO SYSTEM	COMPRESSOR/EXPANDER	BA7220S (IC401)	BA7220S (IC401)
	REC LEVEL CONTROL	M51131L (IC402)	M51131L (IC402)
	LINE AMP/BUFFER	M5218L (IC403,IC405, IC451,IC452)	M5218L (IC403)
	INPUT/OUTPUT SWITCH	HA12139N (IC501)	HA12117NT (IC501)
	FM MOD/DEMODULATOR	HA12118NT (IC503)	HA12118NT (IC503)
	MPX AUDIO DEMOD	MIC3803 (IC1801)	IR-3P02 (IC1801)
	5V REG.	TDA3803 (IC1802)	—
SERVO SYSTEM	SPEED/PHASE CONTROL	HD49726 (IC601)	HD49716 (IC601)
	TRICK PLAY CONTROL	M54874P (IC602)	M54874P (IC602)
	CYLINDER MOTOR DRIVE	HA13403V (IC603)	HA13403 (IC603)
	CAPSTAN MOTOR DRIVE	TA8408F (IC1601)	TA4808F (IC1601)
SYSTEM CONTROL	SYSTEM CONTROL μP	HD4074008A03S3 (IC901)	HD614088SB99 (IC901)
	LOADING MOTOR DRIVE	BA6209U4 (IC902)	BA6209U4 (IC902)
	INDEX μP	—	HES8026D (IC904)
TIMER	TIMER μP	M50955-679 (IC701)	M50955-679 (IC701)
	EAROM	M58630P (IC702)	M58630P (IC702)
TIMER SUB	ON SCREEN DISPLAY μP	HD6074008F (IC2701)	HD4074008F (IC2701)
CH-TUNING SYSTEM	TUNING CONTROL	HES8457B (IC801)	LA7935 (IC801)
POWER SUPPLY	REGULATOR	STK5372H (IC851)	STK5372H (IC851)
VPS	VPS SLICER	HES8052 (IC1406) (For S85E(VPS))	SDA5233 (IC1101) (For S85E(VPS))
	VPS DECODER	—	SDA5640 (IC1102) (For S85E(VPS))

CONTROLS AND FUNCTIONS





1. **OPERATE SWITCH**
   Turn system power on and off.
2. **CASSETTE COMPARTMENT**
   Insert a cassette through the door, and loading will be completed automatically.
   Note: Power is turned on automatically when the cassette is loaded.
3. **EJECT BUTTON**
   Press to remove cassette.
4. **INFRARED RAY RECEIVING SECTION**
   Receives infrared rays from remote control unit.
5. **PEAK LEVEL INDICATOR**
   Shows the peak input levels of each audio channel during recording and the recorded levels during playback.
6. **INDICATORS**
   S-VHS: Lights when the VTR is in the S-VHS mode.
   Hi-Fi/CH 1.2: Controlled with the AUDIO select switch and CH 1/2 button. These indicators show the soundtrack to be played back or monitored.
   STEREO: Will light when tuned to a stereo broadcast.
   BILINGUAL: Will light when tuned to a bilingual broadcast.
7. **MODE INDICATORS**
   - "⊡" appears when a cassette is in the compartment.
   - "PLAY" appears during the playback mode.
   - "REC" appears during the record mode.
   - " ◁◁ " appears during the rewind mode and flashes during rewind visual search mode.
   - " ▷▷ " appears during the fast forward mode and flashes during forward visual search mode.
   - " ▯▯ " appears during the play/record pause mode.
   - " ◷ " appears when turning the power off and either the timer has been programmed or IRT is turned on.
   - "INDEX" appears when turning the index function on.
8. **DIGITAL TIMER DISPLAY**
   This normally shows the time and day of the week.
9. **DIGITAL DATE/COUNTER/REMAIN DISPLAY**
   This shows the current date when the VTR power is turned off or shows the tape counter or time remaining of tape when the VTR power is turned on.
10. **CHANNEL INDICATOR DISPLAY**
    This shows the channel number corresponding to the channel selected.
11. **A.DUB INDICATOR**
    Lights when the VTR is audio dubbing.
12. **INSTANT RECORDING TIMER (IRT) BUTTONS**
    This allows unattended recording.
    Timer will switch the VTR off automatically at a preselected time. This is convenient when you go out during recording.
13. **REC BUTTON**
    Press REC button to record.
14. **CHANNEL SELECT BUTTONS**
    Select the channels you wish to view or record by pressing these buttons.
    And you can also select the "AU" position* by pressing this button to record or watch the programme input at the video/audio in or EURO jack.
    * One channel position either higher or lower outside the range of your preset channels.
15. **MEMORY BUTTON**
    Press this button so "M" is indicated in the display, then fast forward or rewind the tape. The tape stops when the counter reaches approximately "0000".
    Note: Press the button again to switch off the "M" indicator.
16. **COUNTER RESET BUTTON**
    To reset counter to "0000".
17. **COUNTER/REMAIN SELECT BUTTON**
    Press to switch from counter display to tape remain display.
18. **RECORDING LEVEL CONTROLS**
    When recording with ALC switch set to "OFF" adjust these controls so that +7 dB segments light occasionally (during especially loud portions).
19. **PAUSE BUTTON**
    Press to pause during recording.
    Press to view a still picture during playback.
    Press again to release.
20. **STOP BUTTON**
    The STOP button must be pressed between "RECORD" and any other operation.
21. **F.FWD/VISUAL SEARCH BUTTON**
    Press to activate fast forward.
    Press this button during playback and forward playback picture at high speed can be seen.
22. **PLAY BUTTON**
    Note: When the cassette (with erase prevention tab removed) is loaded, playback starts automatically.
23. **REW/VISUAL SEARCH BUTTON**
    Press to start rewind.
    Press this button during playback and reverse playback picture at high speed can be seen.
24. **SECONDARY CONTROL DOOR**
25. **HEADPHONE SOCKET**
    Plug a headphone into this socket and adjust the volume with the PHONES LEVEL control.
26. **PHONES LEVEL CONTROL**
    Adjusts the output level for headphones.
27. **PICTURE CONTROL**
    Adjust the picture so it is easy to see.
28. **TRACKING CONTROL**
    To minimize noise in playback.
29. **AUDIO SELECT SWITCH**
    Selects the linear audio playback or automatic selection of Hi-Fi VHS sound recorded on the tape. Normally set it to AUTO position.
30. **MPX SWITCH**
    Set this switch to "ON" when recording an FM programme to reduce the slight noise from the FM tuner.
    Set this switch to "OFF" when recording sound other than FM.
31. **AUX SELECT SWITCH**
    Set to A/V when recording signals input through the EURO jack on the rear papel, and set to LINE when recording signals from the AUDIO IN and VIDEO IN or S-VHS IN jacks.
    With either selection, operate the CHANNEL select button to display "AU" in place of a channel number.
32. **EDIT SWITCH**
    Turn this switch on when using this VTR for playback during dubbing. The dubbed tape will provide clearer pictures. This function does not work when using this VTR for recording.
33. **ALC SWITCH**
    When you set this switch to the "ON" position, the recording level is controlled automatically. When you set it to the "OFF" position, the audio recording level must be adjusted manually.
34. **RESET SWITCH**
    Press this switch if the digital display malfunctions or no operation mode can be engaged to reset the display. Set the clock to the correct present time.
35. **REC SPEED SELECT BUTTON**
    Select the tape speed; SP (Standard Play) or LP (Long Play) for recording. When LP is selected, "LP" appears in the OSD and VTR's display. When SP is selected, "SP" appears only in the OSD. The playback speed is automatically set to the speed used in recording.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36. **CLOCK/TIMER/CHANNEL PRESET BUTTONS**

37. **VPS OFF BUTTON**
See page 15 for complete information.

38. **A.DUB BUTTON**
Use this button to dub new sound on the previously recorded tape.

39. **EURO JACK**
For connection with a TV with a EURO or DIN jack using an exclusive cable. See your dealer for details.

40. **VIDEO OUT**
Permits video connection of your unit to a TV receiver or another VTR.

41. **VIDEO IN**
Receives the video signal from another VTR or a video camera.

42. **BUZZER SWITCH**
When this switch is on, a beep sound will be heard when any VTR operation button is pressed. This is a convenience in operation.
To stop this function, turn the switch off.

43. **AUTO/COLOUR SWITCH**
AUTO: Circuits are automatically switched to colour or black/white mode. Set to this position when playing or recording a PAL signal.
COLOUR: When recording a PAL signal in an area far from the broadcasting station, the recorded picture may lose colour. In this case, set to this position in recording and playback.

44. **AERIAL INPUT SOCKET**
Connect an external aerial.

45. **ATTENUATOR SWITCH**
Generally set to the OFF position.
Set to "ON" when interference occurs in an area with a strong signal.

46. **TSG ON/OFF SWITCH**
Set to ON and check that the video channel of your TV set is correct. After setting, set this switch to OFF.

47. **RF OUTPUT**
Connect to TV aerial input.

48. **RF CHANNEL CONTROL**
Turn TSG ON/OFF switch to "ON" and rotate this control to set the video channel correctly.

49. **MAINS LEAD**

50. **S-VIDEO IN/OUT**
These are the input and output sockets for the separated luminance "Y" and chrominance "C" components of the video signal. Connections to these sockets will result in clearer pictures.
When using these sockets, also connect the separate audio cable as these sockets don't carry audio.

51. **V.LOCK CONTROLS**
If you see vertical shaking on the TV screen in the still playback mode, rotate these controls to minimize shaking.

52. **MIC JACK**
Connect the microphone for audio dubbing.

53. **CAMERA PAUSE JACK**
Connect camera pause cable.

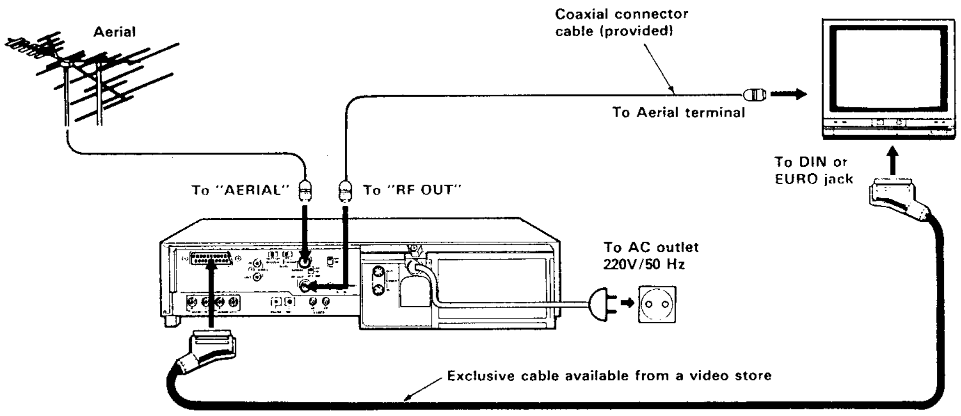
54. **AUDIO OUT (L), (R)**
Permits audio connection of your unit to a TV receiver or another VTR.

55. **AUDIO IN (L), (R)**
Receives audio signals from a camera, external sound equipment or from another VTR.

INSTALLATION

Since there are many different types of TV, there are several ways to connect.
Connect the aerial to the VTR then connect the VTR to the TV.

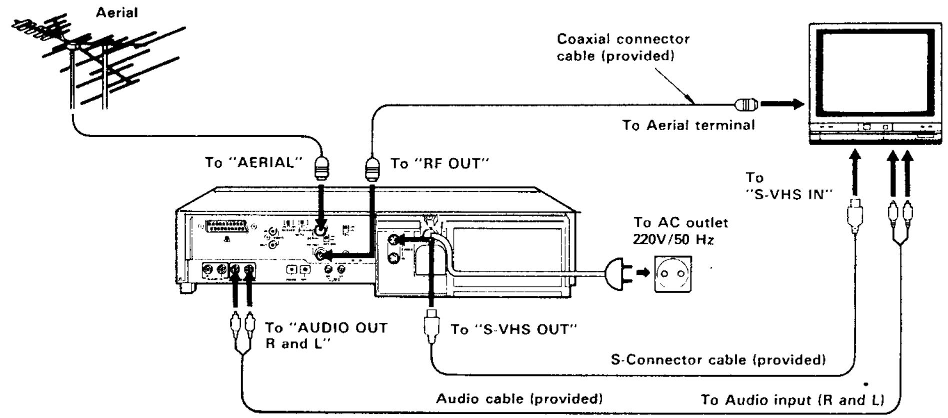
Example 1 **If your TV set has a DIN or EURO jack, follow the connection below.**


Aerial
Coaxial connector cable (provided)
To Aerial terminal
To DIN or EURO jack
To "AERIAL"
To "RF OUT"
To AC outlet 220V/50 Hz
Exclusive cable available from a video store

With this connection method:

- During playback, the signals from the EURO jack of the VTR are fed to your TV.
  To receive these signals, your TV must be set to the video input mode.
- You can record the programme selected by the channel select button of the TV set. In this case, press the CHANNEL select button (forward or reverse) so the "AU" indication lights in the VTR display instead of a channel number, then set the AUX select switch in the door to the A/V position.
  Note: You can also select "AU" by pressing buttons 9 and 1 on the remote control unit.

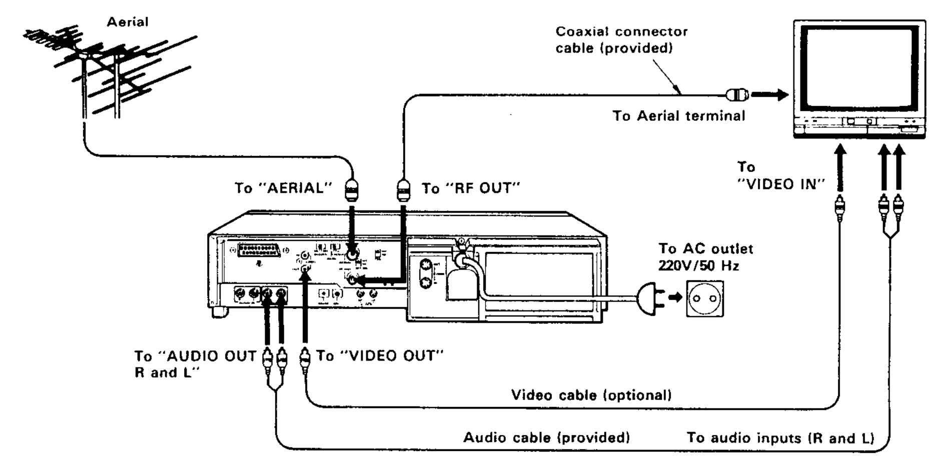
Example 2 **If your TV set has S-VHS IN and AUDIO IN jacks, follow the connections below.**


Aerial
Coaxial connector cable (provided)
To Aerial terminal
To "AERIAL"
To "RF OUT"
To "S-VHS IN"
To AC outlet 220V/50 Hz
To "AUDIO OUT R and L"
To "S-VHS OUT"
S-Connector cable (provided)
Audio cable (provided)
To Audio input (R and L)

With this connection method:

- During playback, the signals from the S-VHS OUT and AUDIO OUT jacks of the VTR are fed to your TV.
  To receive these signal, your TV set must be set to the video input mode.
  Note: Be sure to connect the separate audio cable. The S-connector cable does not carry audio.

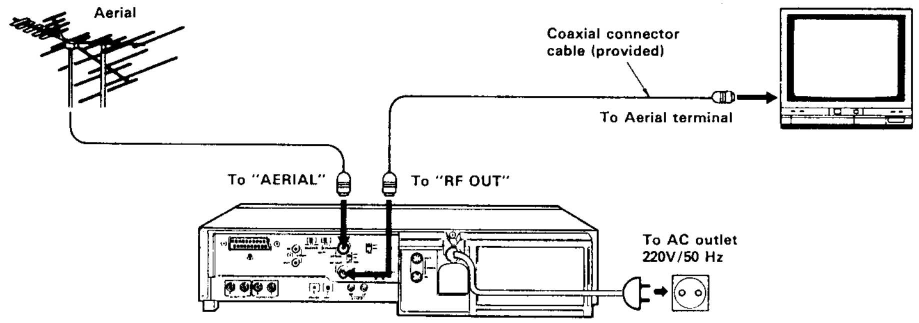
Example 3 If your TV set has VIDEO IN and AUDIO IN jacks, follow the connections below.


Aerial
Coaxial connector cable (provided)
To Aerial terminal
To "AERIAL"
To "RF OUT"
To "VIDEO IN"
To AC outlet 220V/50 Hz
To "AUDIO OUT R and L"
To "VIDEO OUT"
Video cable (optional)
Audio cable (provided)
To audio inputs (R and L)

With this connection method:

- During playback, the signals from the VIDEO OUT and AUDIO OUT of the VTR are fed to your TV set. To receive these signals, your TV set must be set to the video input mode.

Example 4 If your TV set does not have the above jacks, follow the connection below.

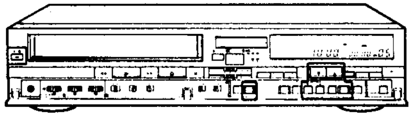

Aerial
Coaxial connector cable (provided)
To Aerial terminal
To "AERIAL"
To "RF OUT"
To AC outlet 220V/50 Hz

With this connection method:

- The signals from the RF OUT of the VTR are fed to your TV set. To receive these signals, select the video channel with the TV's channel button.
- To receive stereo sound, connect the AUDIO OUT (R and L) jacks of the VTR to the audio input (left and right) jacks of a stereo system.
- The advantages of the S-VHS system are not available with this connection.

PRE-TUNING OF BUILT-IN TV TUNER

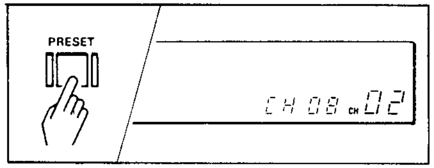
This VTR incorporates a complete television tuner with the required tuning controls. Once you have pre-tuned to preferred stations, you can select any of them by merely pressing the CHANNEL select button.
Before pre-tuning TV stations, set the clock time.



User's controls

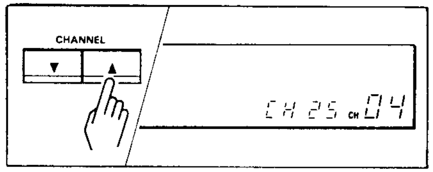
1 Turn on the Operate switches of the VTR and the TV, then set the TV to the pre-tuned video channel.

2 Press the PRESET button once.


PRESET
CH 08 CH 02

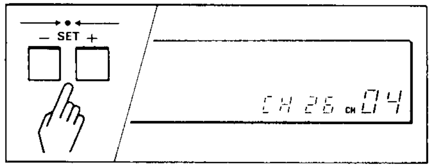
The display indication changes from the clock time display to the channel display.

3 Press the CHANNEL select button on the VTR to select the channel to be memorized.


CHANNEL
▼
▲
CH 25 CH 04

For example, the above diagram shows that channel 4 has been selected.
Note: The Channel Number Display can be now consecutively selected from "01" through "69" and "AU" by pressing the CHANNEL select button either upward or downward. In this case, the Channel Number may be any number.

4 Press and release the SET button (Forward or Reverse) to start tuning.

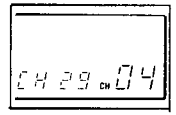

– SET +
CH 26 CH 04

At a station that is broadcasting, the picture appears on the TV screen. If the station received is different from the station to be preset, press SET button (Forward or Reverse) again.
At the next station, the searching will stop and the new station can be preset. Repeat this until the desired station is reached.

Notes:

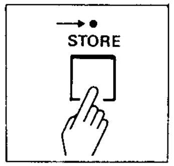
- Press the Forward SET (+) button; channels are scanned in the order VHF (2 – 12) → UHF (21 – 69) → CATV (S1 – S20) → HYPER BAND (S21 – S41) → VHF (U1 – U5); the colon (:) blinks when scanning CATV and HYPER channels.
- Press Reverse SET (−) button; channels are searched in the reverse order to the above.

VHF (2–12) & UHF (21–69) Channels Direct Preset



Press the 10 key buttons on the remote control unit instead of step 4 to preset desired VHF and UHF channels.
To preset UHF channel 29 in the channel position 04, for example, press the CHANNEL select button to display the channel position "04" (in step 3) then press [2] [9] on the remote control unit.

5 Press the STORE button when the desired station is reached.
"– –" will be displayed.
Note: If the TV programme of broadcast by a preset channel does not appear clearly, press the Forward or Reverse SET (+ or −) button to fine tune the channel. **After fine tuning is completed, press the STORE button again.**



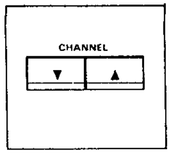
6 Follow the same steps as explained in steps 3 through 5 above for other stations.
You can preset up to 69 channels in memory.

7 After having completed tuning all broadcast stations you want, press the PRESET button once again.

These stations preset in memory as shown in the above can be selected by the CHANNEL select buttons on the VTR.

Channel selection

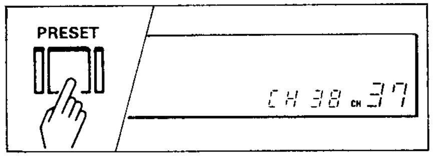
The channel up and down controls on the VTR permit advancing the tuner directly to the next higher or lower programmed channel.



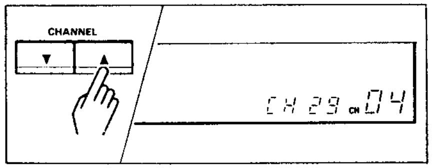
Eliminating unwanted preset channels

You can rearrange the desired channels by eliminating unwanted preset channels for channel up/down tuning.

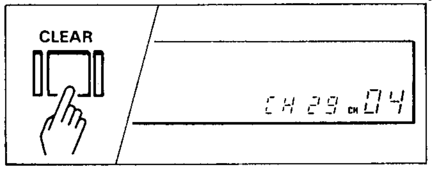
1 Press the PRESET button once.



2 Press the CHANNEL select buttons until an unwanted channel is found.



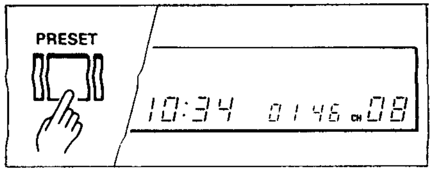
3 Press the CLEAR button once.



Sound will go off indicating the channel has been erased from memory.

4 Repeat steps 2 and 3 until all unwanted channels have been erased.

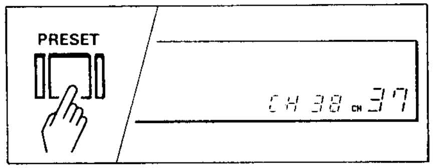
5 After eliminating them, press the PRESET button once again.



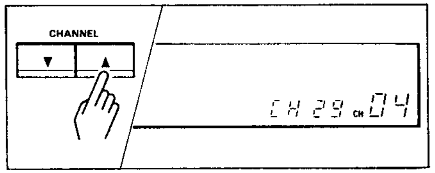
Adding channels

You can preset channels again which have previously been eliminated because they were unwanted.

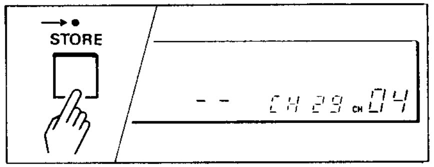
1 Press the PRESET button once.



2 Press the CHANNEL select buttons until the channel which has been previously eliminated and you desire to preset again is found.



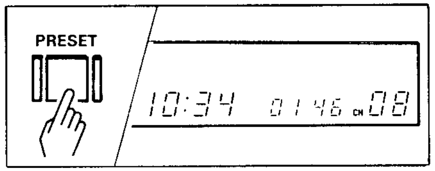
3 Press the STORE button.



Sound will come on indicating the channel has been added to memory.

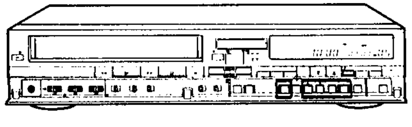
4 Repeat step 2 and 3 for other channels if desired.

5 After adding channels, press the PRESET button once again.



CLOCK TIME SETTING

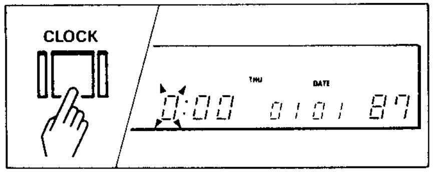
The built-in digital clock is based on a 24-hour cycle and gives you a constant readout of the time and day. The clock time can also be set with the remote control unit provided. See the supplementary manual for operating procedure.



User's controls

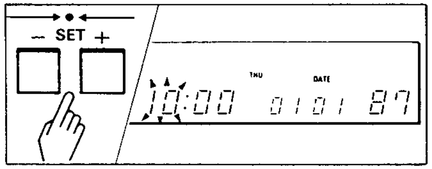
- When the MAINS lead is plugged in for the first time, "–:– –" and "DATE – – – –" will appear in the display.

1 Press the CLOCK button.



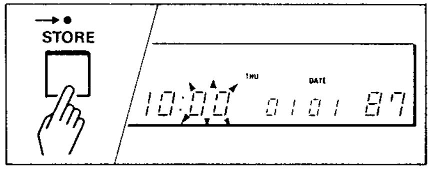
"0" hour starts flashing.

2 Press the SET button (Forward or Reverse) to set the present hour.



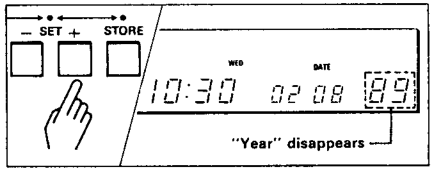
Hold the button down to advance rapidly.

3 Press the STORE button when the present hour appears.
"00" minutes starts flashing.



For example, the diagram shows that "10" hours have been set.

4 Repeat steps 2 and 3 to set minute, day, month and year.



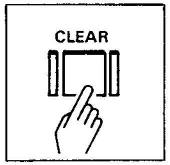
The day of week appears automatically after the year has been entered.
The year disappears from the display when the STORE button is pressed.

For example, the diagram shows that 10:30 WED, 2 of August 1989 have been set.

Now the clock has been set to the correct time and date.

To correct an error during setting

You can correct an error in the setting any time before the last step by pressing the CLEAR button repeatedly until the digit to be corrected is flashing. Then enter the correct digit and continue the setting sequence.



Notes:

- This VTR has a built-in power failure compensation circuit. If a power interruption of less than 15 minutes occurs, the clock time will not be lost.
- The digital display is bright when the OPERATE switch is turned ON and automatically becomes dim when the switch is off.
- When the time set by the remote control unit provided is transferred to the VTR, the transferred information is displayed on the TV screen for about 8 seconds.

DAY/MONTH/YEAR
2 AUG 89
10:30

S-VHS AND Hi-Fi SOUND

■ S-VHS

S-VHS has realized high resolution (a horizontal resolution of 400 lines or more) and high picture quality when compared to the standard VHS format.

Usable Cassette Tapes

TAPE TYPE	RESULT OF RECORDING	RESULT OF PLAYBACK
Standard VHS	Standard VHS	Standard VHS
S-VHS	Switchable between Standard VHS and S-VHS	Automatic selection of standard VHS and S-VHS

- Use a videocassette with an S-VHS mark.
- Cassettes with an S-VHS mark can be recorded in both the S-VHS and VHS formats.
- You can use cassettes with a VHS mark, but the recording will be in the VHS format.

Compatible With Standard VHS Recorders

TAPE TYPE	RESULT OF PLAYBACK
Standard VHS	Standard VHS
S-VHS	Not usuable (No picture)

- Tapes recorded in the S-VHS format can be played only by recorders with an S-VHS mark.
- You can switch this VTR to record in both the S-VHS and VHS formats.
- This VTR discriminates between the S-VHS and VHS recording formats automatically in playback.

TVs That Can Be Connected

- Tapes recorded in the S-VHS format produce high quality pictures with high resolution. It is therefore better to connect this VTR to a high picture-quality, high-resolution TV to fully enjoy the superb performance of the VTR. We recommend TV sets with S-VHS IN jack, Audio and Video input jacks or a EURO jack.

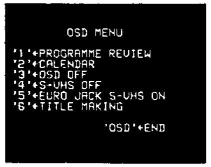
S-VHS IN Jack

This VTR has S-VHS IN/OUT jacks on the rear panel which input (output) the video signal after separation into luminance (Y) and chrominance (C) signals. Connecting these jacks to a TV set gives a picture that is much clearer than can be obtained from the signal supplied through the conventional video jack.

* The "S" in the S-VHS IN/OUT jacks stand for "S"eparate Y/C.

Selecting the S-VHS and VHS format

1. Point the remote control at the front of the VTR then press the OSD button. TV screen shows the OSD menu.



```
        OSD MENU

'1'←PROGRAMME REVIEW
'2'←CALENDAR
'3'←OSD OFF
'4'←S-VHS OFF
'5'←EURO JACK S-VHS ON
'6'←TITLE MAKING

                'OSD'←END
```

2. Press button 4 to turn the S-VHS system on and off.
   To play back tape through the EURO jack located on the back of VTR, press the button 5 to turn the S-VHS system on and off.
3. Press the OSD button to erase the OSD menu.

Note: Normally select the S-VHS ON mode. This way, if you insert an S-VHS cassette, the VTR will record in the S-VHS format. If you insert a standard cassette, the VTR will automatically record in standard VHS format. Select the S-VHS OFF mode only if you want to record on an S-VHS tape and to play it in a standard VHS VTR that does no have the S-VHS format.

■ Hi-Fi SOUND

This VTR records sound using the following two formats.

Hi-Fi sound

FM sound recorded using the rotary audio heads.

Normal (linear) sound

Records in monaural using the same format as with a non-Hi-Fi VTR. Therefore, conventional VTRs can be used for playback.

Remarkable Specifications of Hi-Fi Sound

• *Dynamic range*	90 dB
• Frequency response	20 Hz – 20 kHz
• Wow and flutter	0.005% or less

Recording stereo broadcasts

- Stereo programmes are recorded in Hi-Fi on both the L and R channels and also recorded on the linear track as monaural.

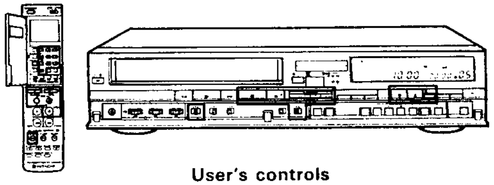
Recording bilingual broadcasts

- Both main speech and sub speech sounds are recorded on the Hi-Fi audio tracks separately.
- Only main speech sound is also recorded on the linear audio track.

Audio dubbing

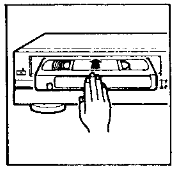
- The sound is recorded on the linear track. (The previously recorded sound will be erased.)
- The sound on the Hi-Fi track remains without being erased.
- The required sound on the dubbed tape can be heard during playback by changing over the AUDIO select switch.

RECORDING TV PROGRAMMES

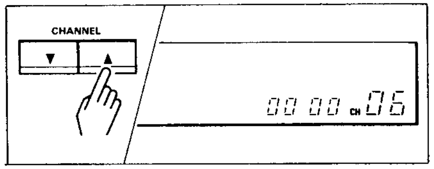


User's controls

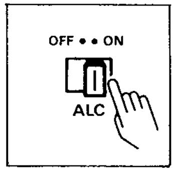
1 Insert a cassette.
Note: Be sure to check that the erase prevention tab is not missing. If it is removed, the VTR goes into playback mode automatically.



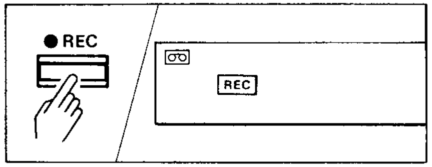
2 Select the channel to be recorded by pressing the CHANNEL select buttons.



3 Set the ALC switch to ON.
To manually control the recording level, see "Recording level adjustment" on the next page.

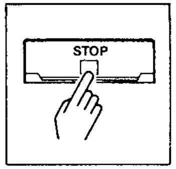


4 Press the REC button.



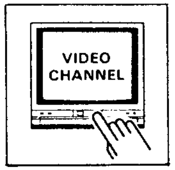
Now, recording starts.

5 After finishing recording press the STOP button.



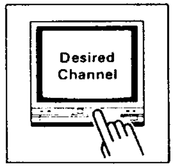
To view same programme while recording

You can view same programme while recording by merely selecting the video channel with your TV channel button.



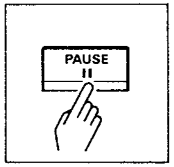
To record one programme while viewing another

You can record one programme while viewing another by merely selecting the channel you want to view with your TV channel button. The recorded programme can be viewed later at your convenience.



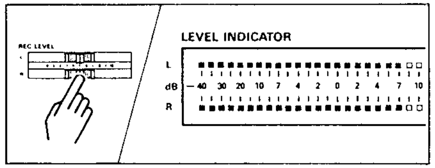
Notes:

1. If you wish to avoid recording unwanted material, press the PAUSE button. Press the PAUSE button again to release the pause mode. To prevent tape damage, do not leave the unit in the pause mode for more than 5 minutes.
2. If you want to change channels while in the record mode, press the PAUSE button then select the desired channel.
   Press the PAUSE button to release the pause mode.
3. If the cassette in the VTR has its safety tab removed, the VTR will eject it when the REC button is pressed.
4. Your TV does not have to be on to make a recording because the VTR records TV programmes without the aid of your TV. Its only use is for monitoring.



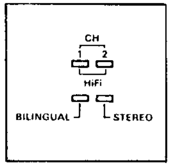
Recording level adjustment

When recording is performed with the ALC switch set to "ON", the sound is automatically recorded at the optimum level.
However, when recording sound from audio equipment, Hi-Fi sound may be more faithfully recorded and played back by manually adjusting the recording level with the ALC switch set to "OFF".


REC LEVEL
LEVEL INDICATOR
L
dB
R
−40 30 20 10 7 4 2 0 2 4 7 10

To adjust the Hi-Fi audio recording level, set the ALC switch to "OFF", then adjust the Recording level control so that the +7 dB segments light occasionally, when especially loud portions are being recorded.
Note: The recording level of the normal sound track is always set automatically.

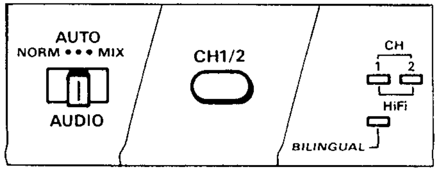
Recording broadcast stereo TV


CH
1
2
HiFi
BILINGUAL
STEREO

The basic procedure for recording broadcast stereo TV is the same as it is for normall off-the-air recording.
The STEREO indicator will come on if the station is broadcasting in stereo.

Recording bilingual broadcast

The basic procedure for recording a bilingual programme is the same as it is for normal off-the-air recording.
The BILINGUAL indicator will come on if the station is broadcasting in bilingual.
Note: You can monitor the desired audio channel with the CH1/2 select button on the remote control unit.
Set the AUDIO select switch to "AUTO" then press the CH1/2 select button as often till you hear the desired audio channel. The selected audio channel is displayed on the VTR. During bilingual broadcasts CH1 is the main language and CH2 is the foreign language.

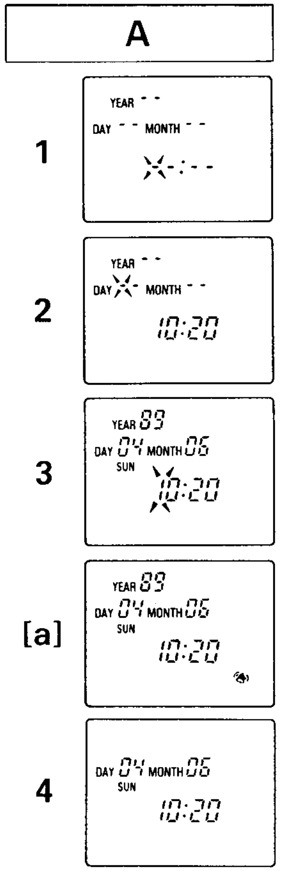

AUTO
NORM ••• MIX
AUDIO
CH1/2
CH
1
2
HiFi
BILINGUAL

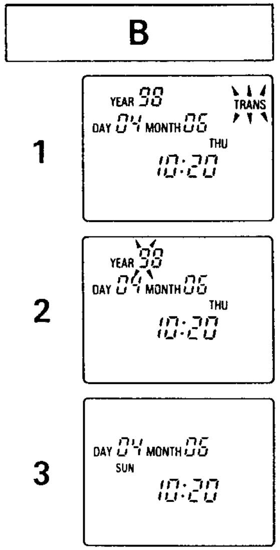
Index signal

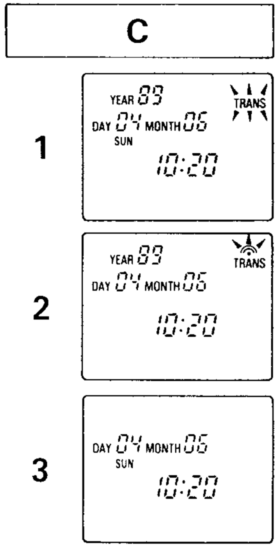
This VTR will automatically record the index signals on a tape at the beginnings of each programme every time the REC button is pressed.
Normally, an index "mark" is not recorded if PAUSE is pressed and released during recording. You must press the REC button. If you are recording two programmes — one immediately following the other — you must press STOP and then REC to insert an index "mark".
If you are making an Audio only tape (no video), the VTR will put index marks on the tape when you release REC/PAUSE.
These indexed marks are useful for "Tape Indexing".

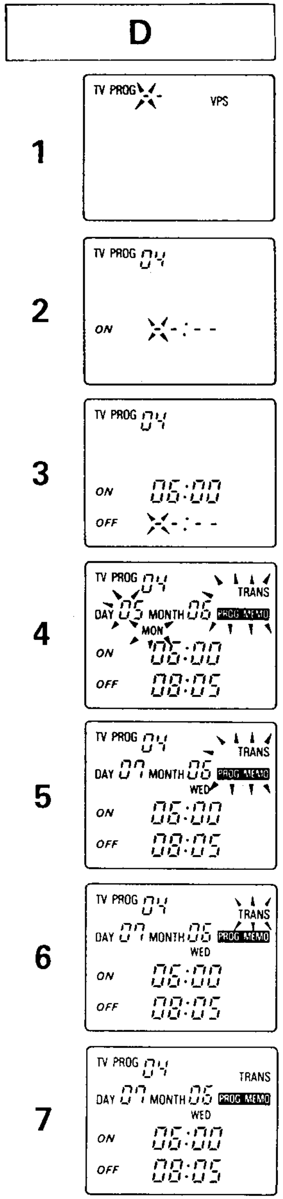
Notes:

1. It is necessary for recordings to be two minutes or longer for the Tape Indexing features to operate correctly. In audio-only recording, it is also necessary to record for four minutes or longer for these functions to operate correctly.
2. When recording is performed from the beginning of the tape, the index mark will not be detected. To prevent this, play back the tape for approx. 5 seconds before recording.


A
1
YEAR - -
DAY - - MONTH - -
2
YEAR - -
DAY MONTH - -
10:20
3
YEAR 89
DAY 04 MONTH 06
SUN
10:20
[a]
YEAR 89
DAY 04 MONTH 06
SUN
10:20
4
DAY 04 MONTH 06
SUN
10:20


B
1
YEAR 98
DAY 04 MONTH 06
THU
10:20
TRANS
2
YEAR 98
DAY 04 MONTH 06
THU
10:20
3
DAY 04 MONTH 06
SUN
10:20


C
1
YEAR 89
DAY 04 MONTH 06
SUN
10:20
TRANS
2
YEAR 89
DAY 04 MONTH 06
10:20
TRANS
3
DAY 04 MONTH 06
SUN
10:20


D
1
TV PROG
VPS
2
TV PROG 04
ON
3
TV PROG 04
ON 06:00
OFF
4
TV PROG 04
DAY 05 MONTH 06
MON
ON 06:00
OFF 08:05
TRANS
PROG MEMO
5
TV PROG 04
DAY 07 MONTH 06
WED
ON 06:00
OFF 08:05
TRANS
PROG MEMO
6
TV PROG 04
DAY 07 MONTH 06
WED
ON 06:00
OFF 08:05
TRANS
PROG MEMO
7
TV PROG 04
DAY 07 MONTH 06
WED
ON 06:00
OFF 08:05
TRANS
PROG MEMO

Before setting the clock/calendar and programming the timer, remember followings.

1. Insert two batteries (size IEC R6) in the battery compartment of remote control unit.
2. First set the clock/calendar, then timer if desired.
3. While you are setting/programming them, the display panel on the remote control unit will prompt you through the procedure.
4. Always press [0] **before** a single-digit hour, minute, day, month, and year.
5. If you press the wrong digit during setting/programming them, press the CORRECT button repeatedly until the incorrect digit flashes then enter the correct digit.
6. You have about one minute to do each step in the procedure. If you do not proceed to the next step within this time, all entries are erased and you must start over.

TO SET CLOCK/CALENDAR

(See diagram [A])

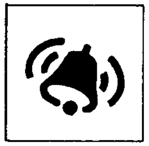
1 Press CLOCK.

2 Set the time.
For example, press [1][0] [2][0] for 10:20.

3 Set the calendar.
For example, press [0][4] [0][6] [8][9] for the 4th of June, 1989.
The day of week appears automatically.
Note: This remote control has an alarm function. Press the TV PROGRAMME (▼)/ALARM button so that alarm indicator lights to operate the alarm function. See the alarm function below for details.

4 After setting the calendar, press CLOCK.
The year disappears from the display panel and the clock starts counting.
Note: If you don't press CLOCK and leave it for about one minute, the display changes as above and the clock starts counting.

Alarm function



When the present time shown by the remote control unit and the start time of the programme stored in memory of the remote control match, the alarm function works and a buzzer sounds for about 5 seconds. This is convenient for you to check whether timer recording starts correctly or not. You can switch the alarm function on and off by pressing the TV PROGRAMME (▼)/ALARM button when you are setting or correcting the clock (when 1 — 3 of [A] and 1 — 2 of [B] are displayed). The alarm function is on when alarm indicator is lit and off when it is off.

To correct the clock/calendar after counting

(See diagram [B])

1 Press CLOCK.

2 Press CORRECT repeatedly until the incorrect digit flashes.

3 Press the correct 10-key button.
Then press CLOCK.

TO TRANSFER THE CLOCK/ CALENDAR TO THE VTR

(See diagram [C])

1 Press CLOCK.
The year appears along with "TRANS" blinking.

2 Press TRANS while aiming the remote control unit at the VTR.
The transferred clock/calendar appears on the display of VTR.

3 Press CLOCK to switch the display panel of remote control unit back to the normal display.

TO PROGRAMME THE TIMER

(See diagram [D])

1 Press PROG.

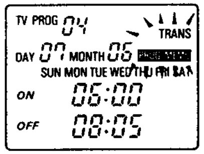
> **VPS indicator:** Used when using a VTR with the Video Programme System built in.
> VPS ON/OFF is activated by the TV PROGRAM (▲) button of the remote control unit.

2 Select the TV station number to be recorded.
For example, press [0][4] for the TV station 4.
Notes:
- Press [9][1] when recording video and audio from external equipment.
"AUX" appears in the display panel in place of a station number.
- When recording video from the VTR's tuner and audio from external equipment, press [9][0] to display "SC" and then input a station number.

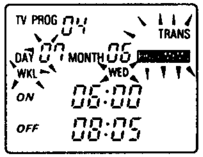
3 Select the start time.
For example, press [0][6] [0][0] for 6:00.

4 Select the stop time.
For example, press [0][8] [0][5] for 8:05.

5 Select date for recording.
- To record on a single day up to one year ahead:
For example, press [0][7] [0][6] to begin recording on the 7th of June.
- To record at the same time every day of week:
Press [7] WKL/DLY once to display all days.
Then select the first recording date.



- To record on a specified day at the same time each week: Press [7] WKL/DLY repeatedly until the desired day of the week you want to record appears.



6 Now, programming has been completed for one event. Press PROG MEMO [M] to store this programme in the memory of the remote control. See "Storing programmes in the memory of remote control" on the next page for details.

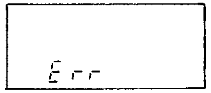
7 After programming, press TRANS.
- If the VTR has the OSD function, the transferred details are displayed in the VTR display and on the TV screen.
- If the VTR has no OSD function, the transferred details are displayed in the VTR display.

8 Press CLOCK to switch the display panel on the remote control unit back to the clock/calendar display.

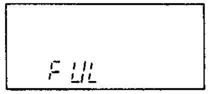
9 To activate the VTR's timer and make a recording at the preselected time, be sure to turn the system power off. Of cource a cassette which has an intact safety tab must be inserted.

Operating notes

1 If you select a TV station which is not displayed if the TV PROG button on the VTR is pressed, "Err" is displayed by the VTR when the TRANS button is pressed. In this case, correct the channel then transfer them to VTR.



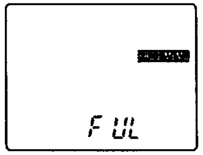
2 Check the display on the VTR before transferring data. If the TRANS button is pressed when all the programme numbers that the VTR can store are occupied, a "FUL" indication will appear in the display on the VTR and the information tranferred will be rejected.



Storing programmes in the memory of the remote control

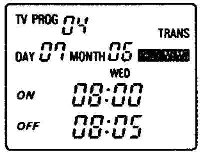
This remote control unit can store programmed information in its memory for up to 4 programmes. Press PROG MEMO [M] in step 6 to store the details of the programme being displayed on the remote control in its memory. When storing the programme in memory, [PROG MEMO] lights to inform you. If you store a programme in memory, you can check or correct it easily.

Note: If you attempt to store another programme after storing 4 programmes, [PROG MEMO] does not appear in step 4. If PROG MEMO [M] is pressed at this time, the indication below appears to inform you that the memory is full.

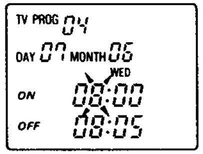


Correcting a programme in memory of the remote control unit

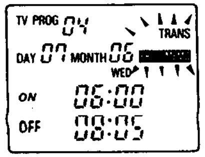
1. Press PROG MEMO [M] to display the incorrect programme.



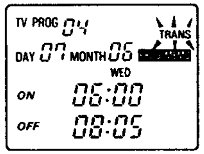
2. Press CORRECT repeatedly until the incorrect digit flashes.



3. Press buttons 0 — 9 to input the correct digit.
4. After the correction, press CORRECT until "TRANS" and [PROG MEMO] flash.



5. Press PROG MEMO [M] to store the programme.

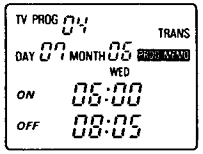


6. Press TRANS to transfer the programme to the VTR.

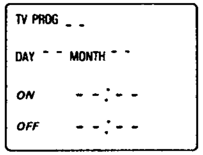
Note: The previously stored incorrect programme is rewritten with the new programme. However, when the incorrect programme has already been transferred to the VTR, it is stored in the memory of the VTR. Clear the programme following "To clear a programme from the VTR's memory".

Clearing a programme from memory of remote control unit

1. Press PROG MEMO [M] when the remote control is displaying the present time to display the programme to be cleared.



2. Press COUNTER RESET button.



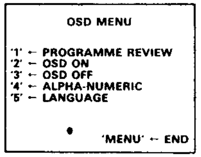
The programme will be cleared.

Note: When a programme is cleared from the memory of the remote control, it is not cleared from the VTR's memory. To clear the programme from the VTR's memory, see "To clear a programme from the VTR's memory" on the next page.

To check programming in the memory of the VTR

There are two ways to check the details of a programme transferred from the remote control to the VTR.

- To check it in the VTR's display:
  Press the MENU button with the VTR turned off. Press the MENU button repeatedly to check all programmes. If you press the OSD DISP button, you can scan the details of stored programmes visually. The display will return to the clock after several seconds.
- To check it on the TV screen (if your VTR provides OSD function):
  1. Turn the TV and VTR on.
  2. Set the TV to the video channel (37).
  3. Press the MENU button.
     - The menu will appear on the TV screen.

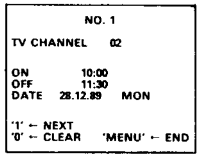


OSD MENU

'1' ← PROGRAMME REVIEW
'2' ← OSD ON
'3' ← OSD OFF
'4' ← ALPHA-NUMERIC
'5' ← LANGUAGE

● 'MENU' ← END

4. Press [1] .
   - The programme will appear.
   - Press [1] repeatedly to check all programmes.
   - Each programme is displayed for approx. one minute.



NO. 1

TV CHANNEL 02

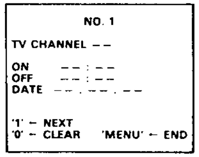
ON 10:00
OFF 11:30
DATE 28.12.89 MON

'1' ← NEXT
'0' ← CLEAR 'MENU' ← END

5. Press the MENU button after checking programmes.
   - The TV will return to a normal picture.
   - If the MENU button is not pressed within one minute, the TV will return to a normal picture.

To clear a programme from the VTR's memory

- To clear it while monitoring it in the VTR's display:
  1. Display the programme to be cleared in the VTR's display. See "To check programming in the memory of the VTR" at left for the operation.
  2. Press the COUNTER RESET button. The display returns to the clock time display and the cleared programme number disappears.
- To clear a programme while monitoring it on the TV screen (if your VTR provides OSD function):
  1. Display the programme to be cleared on the TV screen. See "To check programming in the memory of the VTR" at left for the operation.
  2. Press [0].
     The programme is cleared and the picture changes to that shown below.



NO. 1

TV CHANNEL – –

ON – – : – –
OFF – – : – –
DATE – – . – – . – –

'1' ← NEXT
'0' ← CLEAR 'MENU' ← END

3. If you want to clear another programme, press [1] to display the programme to be cleared an then press [0].
4. Press the MENU button when clearing is completed. The TV screen returns to a normal picture.
   - When the CLEAR button is not pressed within one minute, the TV screen returns to a normal picture.

Programming errors

If programmes overlap, the VTR will select the programme with the earlier start time. When that programme is over, the VTR will switch to the next programme. If the start times are the same, the VTR will select the programmes in numerical order.

Note: If the display of the remote control is not correct, remove the batteries and leave the unit for about 30 seconds, then re-insert the batteries.

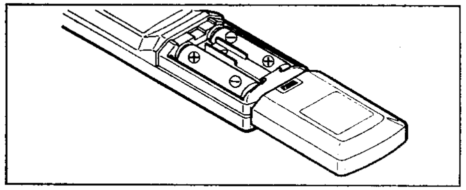
As the clock and timer programmes will be erased, reset the clock and re-programme the timer.

REMOTE OPERATION

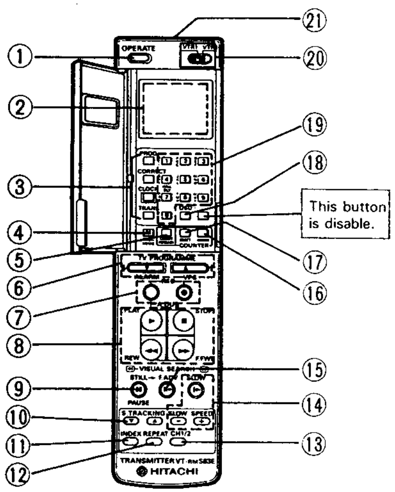
You can operate the VTR from a distance using the infrared remote control unit which performs the same functions as the corresponding buttons on the VTR.

Power source of infrared remote control unit

The infrared remote control unit is powered by two batteries (size IEC standard R6). The life of the batteries is about a year although it depends on the number of times the unit is used. Replace the batteries when operation is not possible or when the distance becomes too small.



Controls and function



This button is disable.

① **OPERATE:** Same as OPERATE on the VTR (turns operate on/off).

② **Clock/time display:** While setting the clock/timer, this display will prompt you through the procedure. After setting the clock, the display shows the clock time.

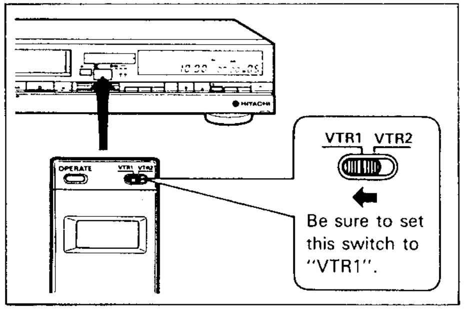
③ **Clock/timer programme buttons:** See the supplementary manual for complete information.

④ **PROG MEMO:** Press to store the programmed contents in the memory of the remote unit after programming the timer. This can store up to 4 programmes. See the supplementary manual for complete information.

⑤ **COUNT/REMAIN:** Press to switch from a counter display to tape remaining display.

Operation of remote control

To use the infrared remote control unit aim it at the receiver on the front panel of the VTR.



Be sure to set this switch to "VTR1".

⑥ **TV PROGRAMME:** Same as CHANNEL on the VTR. (Selects the next higher or lower TV station.)

⑦ **REC:** Press both buttons to start recording.

⑧ **PLAY/STOP/REW/F.FWD:** Same as on the VTR.

⑨ **STILL/PAUSE:** Same as STILL/PAUSE on the VTR. (Stops the tape temporarily.)

⑩ **S.TRACKING:** Minimize noise in the picture during playback.

⑪ **INDEX:** Used for INDEX function.

⑫ **REPEAT:** For repeat function.

⑬ **CH1/2:** Select the desired audio channel while playing a tape.

⑭ **SLOW/SLOW SPEED:** Used for slow motion play.

⑮ **F.ADV:** Advance the picture from frame to frame during still playback.

⑯ **COUNTER MEMO:** Turns counter memory function on and off.

⑰ **COUNTER RESET:** Same as RESET on the VTR. (Resets the tape counter to "0000" or calculates the tape remaining for an E240 cassette.)

⑱ **OSD:** Controls the On-Screen Display.

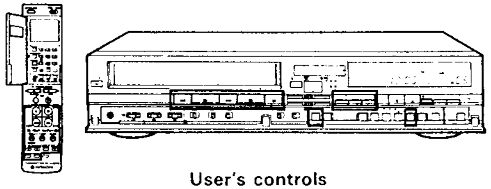
⑲ **10-KEY button**
- Press two numbers to select a TV station.
- Also use for setting the clock and programming the timer.

⑳ **VTR1/VT2:** Set this switch to "VTR1" to remotely control the VTR. The VTR2 position is disable.

㉑ **Transmission window:** Transmits commands to the VTR.

Note: The infrared rays will bounce off the walls and eventually reach the receiver on the VTR, but for best results transmit the rays directly to the receiver.

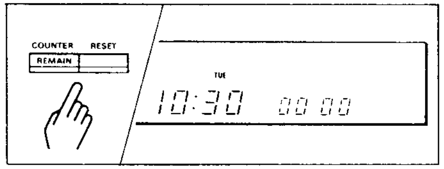
SPECIAL CHARACTERISTICS



User's controls

Tape counter

This indicates the amount of video tape transported as a number. Press the COUNTER/REMAIN select button to display the tape counter in the display then press the RESET button to set the counter reading to "0000" when starting recording or playing back.

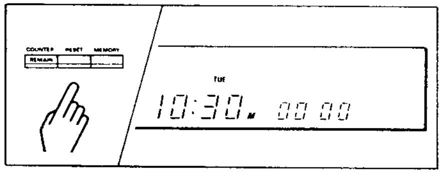


Note the number on the Tape counter at the beginning and end of each programme you record. This will allow you to use the counter to find the desired programme later.

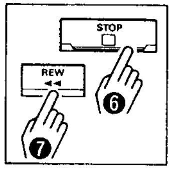
Counter memory function

This is useful if there is a section of tape you want to view immediately after recording or if you want to return to the same point several times.

1. Begin recording or playing back a tape.
2. Press the COUNTER/REMAIN select button to display the tape counter in the display.
3. At the point where you want playback to begin, reset the tape counter to "0000" by pressing the RESET button.
4. Press MEMORY button, and the "M" appears in the display.



5. Continue to play or record.
6. Press the STOP button when recording or playback finishes.
7. Press the REW button.



The tape will automatically stop at the pre-selected "0000" position.

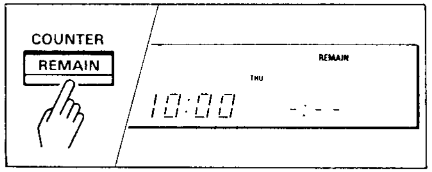
Actually, so that you won't miss the very first part of the programme to be viewed, the tape will stop slightly prior to "0000" at approximately the "9997" position.

Note: The counter memory function will also operate during the fast-forwarding mode.

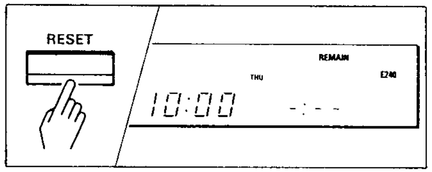
Tape remaining

This function allows the remaining tape to be displayed as a time during recording or playback.

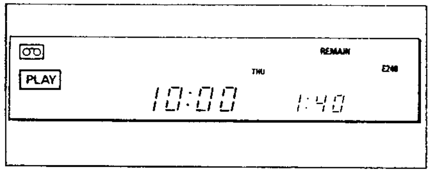
1. Press the COUNTER/REMAIN select button. The "REMAIN" indicator lights in the display and the counter display is replaced with the tape remaining display.



2. Press the RESET button and display the E240 indicator in the display only when the cassette E240 is used.
   Note: Set the RESET button correctly matching the tape used. When the setting position is wrong, the remaining time is not displayed correctly.

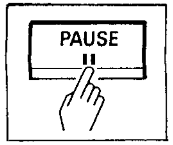


3. Start recording or playback. After approx. 15 seconds, the remaining time appears in the display.



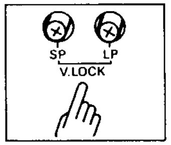
Note: Use the tape remaining display as a reference. The tape remaining function is designed so it works correctly with E-30, E-60, E-120, E-180 and E-240 cassettes. If you use a cassette other than these, the tape remaining will not be displayed correctly.

Still playback



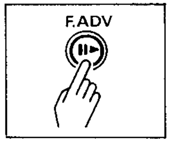
Press the PAUSE button to stop the picture on the screen during playback.
During still playback, press the PAUSE button to return to normal playback or the STOP button to stop the tape.

Notes:



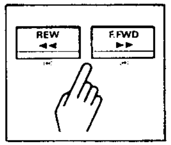
- If you see vertical shaking on the TV screen in still playback mode, rotate the V.LOCK controls on the rear panel to minimize shaking. (SP for tapes recorded in SP and LP for tapes recorded in LP.)
- When the still playback mode continues for about 5 minutes, the VTR switches to the stop mode automatically to prevent damage to the tape.
- The playback picture will have some noise in the still playback mode.

Frame advance



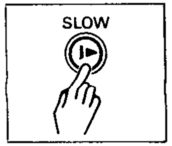
When you hold F.ADV button on the remote control unit down during still playback mode, tape will be played back frame by frame. It operates only after PAUSE button has been pressed.

Visual search



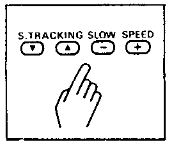
This allows you to view the played back picture at high speed in both the forward and reverse directions.
Press either the REW or F.FWD button during playback, then release it. Pictures can be viewed at high speed in either the forward or reverse direction. Press the PLAY button to return to normal playback or press the STOP button to stop tape.
Press and hold the REW or F.FWD button in the visual search mode. Pictures can be viewed at higher speed than in normal visual search. Release the button to return to the normal visual search.
Note: The playback picture will have some noise in the visual search mode.

Slow function



Press SLOW button on the remote control during playback, and the tape is played back at slow speed.
Then use the SLOW SPEED buttons on the remote control unit to vary the playback speed.

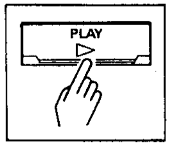
Notes:



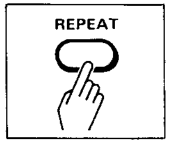
- When noise appears in the slow playback pictures, it can be removed by pressing the S.TRACKING buttons on the remote control unit. Removing the noise in the slow playback also lets you enjoy a noisefree picture in still playback.
- When the slow playback mode continues for about 5 minutes, the VTR switches to the play mode automatically.

Repeat function

Use this function to repeat the scene you have just viewed during playback.

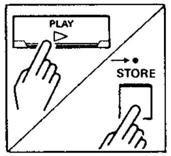


1 During playback, press PLAY button at the scene where you want the repeat of the playback to start. The playback continues.



2 Press REPEAT button on the remote control unit. The VTR enters into the reverse search mode then enters into the playback mode at the position where the PLAY button was pressed.

Auto endless play



Press the PLAY and STORE buttons simultaneously; you can play the tape from the beginning to the end repeatedly. To stop endless play, press the EJECT or OPERATE button.
Note: If the counter memory function is turned on, the VTR stops rewinding at "0000" then start playback.

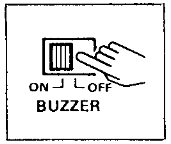
Automatic rewind

The VTR automatically rewinds the tape when the end of the tape is reached.

Rewind shut off

If OPERATE switch is pressed during rewind operation, power will be turned off automatically after the tape has been completely rewound.
Note: If the counter memory is turned on, the VTR will stop rewinding and switch off at 0000.

Beep sound



This VTR has a BUZZER switch on the rear panel. When this switch is ON, a beep sound will be heard when any VTR operation button is pressed.
This is a convenience in operation.
To stop the beep sound, set the switch to OFF.

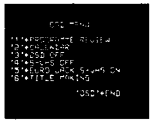
OSD OPERATION

The OSD function allows you to display some functions of this VTR on the TV screen so that you can operate them easily and select the required function using the remote control.

Programme review

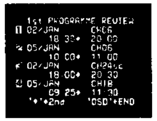
This function is very convenient when you want to check the contents of programmes stored in the VTR.

1. Press the OSD button.
2. Press button [1].



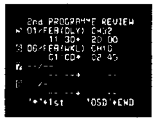
```
OSD MENU
'1'♦PROGRAMME REVIEW
'2'♦CALENDAR
'3'♦OSD OFF
'4'♦S-VHS OFF
'5'♦EURO JACK S-VHS ON
'6'♦TITLE MAKING
'OSD'♦END
```

3. The contents of programme numbers 1 through 4 will appear.



```
1st PROGRAMME REVIEW
1 02/JAN      CH06
     18 30♦  20 00
2 05/JAN      CH06
     10 00♦  11 00
3 02/JAN      CH24sc
     18 00♦  20 30
4 05/JAN      CH18
     09 25♦  11 30
'♦'♦2nd    'OSD'♦END
```

4. Press the button "⬆" (CHANNEL ▲) to display the contents of programme numbers 5 through 8.



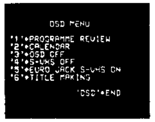
```
2nd PROGRAMME REVIEW
5 01/FEB(DLY) CH32
     11 30♦  20 00
6 06/FEB(WKL) CH10
     01 00♦  02 45
7 --/--
     -- --♦  --
8 --/--
     -- --♦  --
'♦'♦1st    'OSD'♦END
```

5. The contents of programme numbers 5 through 8 will appear.
6. Press the button "⬆" (CHANNEL ▲) if you want to return the screen to the contents of programme numbers 1 through 4.
7. Press the OSD button to return the TV screen to normal. The menu display will automatically return to normal if nothing is done for about 1 minute.

Calendar

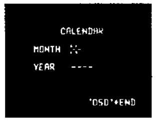
This function accesses the built-in calendar which can display every month from January, 0001 to December, 9999.

1. Press the OSD button.
2. Press button [2].



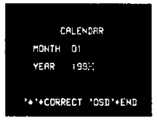
```
OSD MENU
'1'♦PROGRAMME REVIEW
'2'♦CALENDAR
'3'♦OSD OFF
'4'♦S-VHS OFF
'5'♦EURO JACK S-VHS ON
'6'♦TITLE MAKING
'OSD'♦END
```

3. The programmable calendar menu will appear.



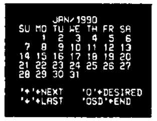
```
CALENDAR
MONTH --
YEAR  ----
'OSD'♦END
```

4. Set the month and year by inputting 6 digits.
   For example, press
   [0] [1] [1] [9] [9] [0] for January, 1990.
   If the incorrect digit is input, press the button "⬇" (CHANNEL ▼) to position the flashing cursor over the digit to be corrected, then input the correct digit.
   Always press [0] before a single digit month.



```
CALENDAR
MONTH 01
YEAR  199-
'♦'♦CORRECT 'OSD'♦END
```

5. The calendar for the month you have input will appear.



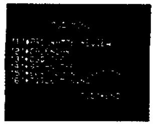
```
JAN/1990
SU MO TU WE TH FR SA
    1  2  3  4  5  6
 7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31
'♦'♦NEXT   'O'♦DESIRED
'♦'♦LAST   'OSD'♦END
```

6. Press the button "⬆" (CHANNEL ▲) to display the calendar of next month or press the button "⬇" (CHANNEL ▼) to display the calendar of the previous month.
7. Press button [0] to return the display to the programmable calendar menu shown in step 3.
   Then repeat step 4 above.
8. Press the OSD button to return the TV screen to normal. The menu display will automatically return to normal if nothing is done for about 1 minute.

Title making

You can create and record titles on a pre-recorded tape.

1. Press the OSD button.
2. Press button [6].



3. The programmable title display will appear on the TV screen along with a flashing block.

4. Select the first character position by pressing the button "↑" (CHANNEL ▲) or the "↓" (CHANNEL ▼).
5. Press one of numbered buttons [0] through [9]. The letters shown in the table on the right are selected using numbered buttons.
6. When the desired character is input, shift the flashing block to the position to be programmed next. Then repeat steps 5 and 6 until the desired title is completed.
7. After completing the desired title, do not shift the flashing block, or the flashing block will be recorded on tape when recording starts.
8. To record this title:
   a. Press PLAY to start playback.
   b. At the point where you want to stop title recording, reset the tape counter to "0000" by pressing COUNTER RESET. Then press COUNTER MEMO to display "M" in the tape counter.
   c. Press REW. The VTR will enter the visual search mode.
   d. Press PLAY then PAUSE at the point where you want to start title recording. The VTR will enter the still play mode.
   e. Press REC.
      The VTR will enter the record/pause mode.
   f. Press the SLOW SPEED button (+) to select whether you will record the title superimposing it on a previously recorded picture or record it against a blue background.
   g. Press PAUSE.
      Now, title recording starts.
   h. Title recording will stop where the tape counter reaches to "0000".

Notes:

- To correct errors during programming press the button "↓" (CHANNEL ▼) or "↑" (CHANNEL ▲) to position the flashing block over the character to be corrected.
  If the button is kept depressed, the flashing block will shift rapidly. Then input the correct digit.
- *These titles cannot be recorded on a non-recorded portion of tape.*
- When you play back a tape on which a title was recorded against a blue background in the visual search and still modes, colour will disappear and skew noise will occur.
- Do not transfer the time from the remote control while recording a title. If you transfer it, the title function will be released.

Character assignment

Following letters are selected by pressing buttons [0] through [9].

[0]	0 ? ! '	[5]	5 J K L
[1]	1 Q Z .	[6]	6 M N O
[2]	2 A B C	[7]	7 P R S
[3]	3 D E F	[8]	8 T U V
[4]	4 G H I	[9]	9 W X Y

Character size and capacity

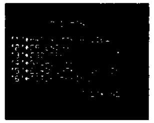
You have a choice of three character sizes; medium, large and extra large when making titles.
Press the S.TRACKING button (▲) repeatedly until the desired size appears on the TV screen.
The programmable capacity using each size is as follows;

MEDIUM: 240 characters along 10 lines with 24 characters per line.
LARGE: 144 characters along 6 lines with 24 characters per line.
EXTRA LARGE: 96 characters along 4 lines with 24 characters per line.

OSD on and OSD off

Whenever you turn on the VTR or change its status – Stop to Play, Play to Stop, change channels, etc. – the new status of the VTR is displayed on the TV screen automatically for a few seconds. You can remove all displays from the screen when they are not needed.

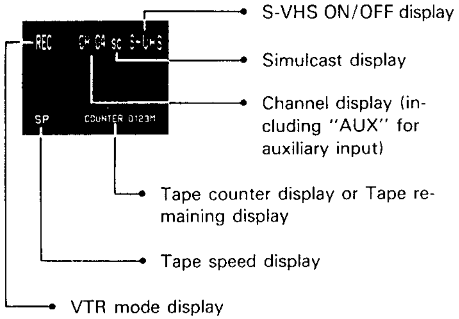
1. Press the OSD button.



2. Press button [3] to turn the OSD feature on and off.
   - "OSD OFF" will appear on the screen for a few seconds when you select OSD OFF.
   - If you select OSD ON, the VTR status will appear for a few seconds.

Note: This VTR has been shipped from the factory with "OSD ON".

Contents of display



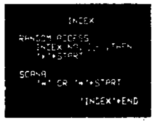
"REC" for record, "PLAY ▶" for play, "▶▶" for fast forward, "◀◀" for rewind, "REC ❚❚" for record/pause and "STOP" for stop.

Tape indexing

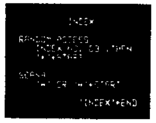
Tape indexing allows you to search the required programmes easily using INDEX signals that are recorded automatically each time a recording is started.
These are two methods of indexing.
One is a Random Access Indexing.
This is the direct recall of the desired programme by inputting a programme number which can be listed on a label stuck on your video cassette.
The other is Scana Indexing in which the first few seconds of all recordings can be viewed during searching. This also allows you to jot down all recording on the tape easily.

Random Access Indexing

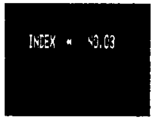
1. Press the INDEX button during the stop mode.
   The index menu will appear.



2. Press two buttons of the 10-key pad to select the desired programme number.
   Note: Up to a maximum number of 99 programmes can be selected.



3. Press the PLAY button (▶).
   You may press the REW or F.FWD button instead of play.



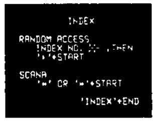
4. The VTR will automatically search for the programme you selected.
   During search, the selected index number and the direction of searching is displayed on the TV screen.
5. When the programme you selected is located, the VTR will automatically begin play and the INDEX indicator on the VTR will be turned off.

Notes:

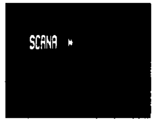
- If this is the first time you have used Tape Indexing since the cassette was inserted, the VTR rewinds the tape to the beginning to start counting index marks.
  If this is not the first time Tape Indexing is used, the VTR can count the index marks without returning to the beginning.
- To use Tape Indexing, the tape must have been recorded by a VTR with the INDEX feature.

Scana Indexing

1. Press the INDEX button during the stop mode.
   The index menu will appear.



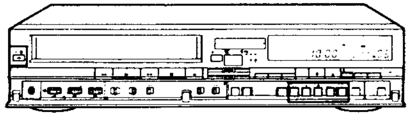
2. Press the REW or F.FWD button.
   The tape will be rewound or fast forwarded until an index mark is detected.



3. When the VTR has located an index mark, it will enter the forward search mode for approximately 10 seconds of the programme following the mark. This is long enough for you to recognize the programme. Then the VTR winds tape to the next index mark in sequence.
   Note: With an audio-only tape, every time an INDEX signal is reached, the tape will be played for 10 seconds.
4. When you see the programme you want to watch, press the PLAY button.
   The INDEX indicator on the VTR will be turned off.

TIMER RECORDING

The programmable electronic clock/timer permits the unattended recording of 8 preselected programmes within a period of 1 year, including the same programme(s) repeated on every day and the same programme(s) every week. It turns the unit on and off and selects the channel automatically.



User's controls

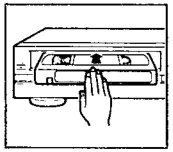
The timer can also be programmed with the remote control unit provided. See the supplementary manual for more details on programming procedures with the remote control unit.

Preparations for timer recording

- Your TV does not have to be on to make a recording because the VTR records TV programmes without the aid of your TV. Its only use is for monitoring.

1 Make sure that the clock shows the present time and day correctly.

2 Insert a cassette. Be sure to check that the record safety tab is not missing. If the record safety tab is missing, recording will not begin.

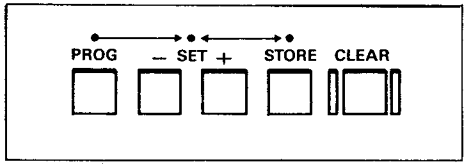


3 Programme the timer.

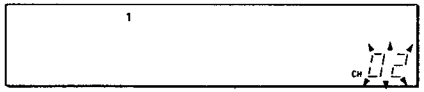
Programming the timer for unattended recording

For unattended recording the timer needs to know what **day** to make the recording, the **time to start**, the **time to stop**, and the **channel to be recorded**.

The buttons for programming the timer are in the secondary control door; PROGRAM, SET and STORE buttons. If you input erroneous information by mistake when programming the timer, press the CLEAR button and input the correct information again.

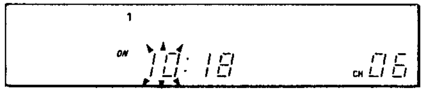


1 Press the PROGRAMME button.



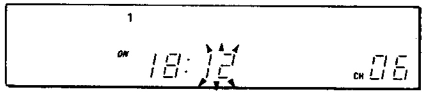
An unused programme number is automatically selected from numbers 1 to 8 in numerical order and the channel number will start flashing.
NOTE: Check the programme numbers in the display before pressing the PROGRAMME button.
The timer allows up to 8 programmes to be stored, but when all programme numbers 1 to 8 are lit in the display, no programming can be performed. To input a programme at this time, clear one of the 8 programme numbers (see "To clear a programme"). When the PROGRAMME button is pressed while all the 8 programme numbers are lit, the "FUL" indicator will light to warn you. (When the BUZZER switch is ON in this state, a beep sound will be heard to warn you.)

2 Choose the channel to be recorded by pressing the SET or CHANNEL select button. Then press the STORE button. Hour starts flashing.



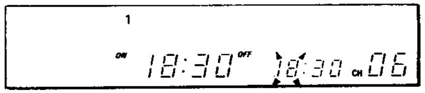
For example, the above diagram shows that channel 6 has been set.

3 Select the hour for recording to start by pressing the SET button (Forward or Reverse). Hold down the button to advance it rapidly.
Press the STORE button after selecting the hour for recording to start.
Minute starts flashing.



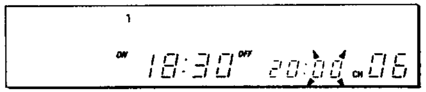
For example, the above diagram shows that "18" hours has been set.

4 Select the minutes for recording to start by pressing the SET button (Forward or Reverse). Hold down button to advance it rapidly. Press the STORE button after selecting the minute for recording to start. "OFF" will appear and hour starts flashing.

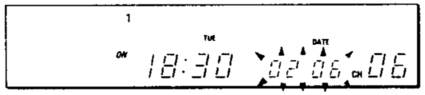


For example, the above diagram shows that "30" minutes has been set.

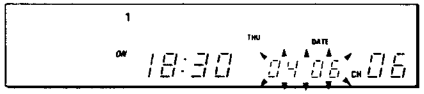
5 Select the hour and minute to stop recording by the same procedures described in steps 3 and 4.



For example, the above diagram shows that "20:00" has been set.
Be sure to press the STORE button after selecting the minute. The current date appears and starts flashing.



6 Press the Forward SET (+) button to select the day and month of recording.

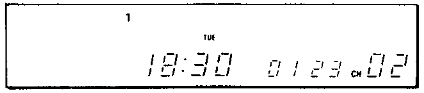


For example, the above diagram shows recording on the 4th of June.

Notes:

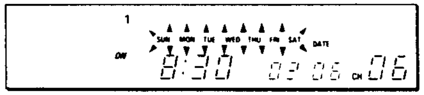
- Day of week appears automatically.
- If you want to start recording on the current day, simply press the STORE button.
- The above diagram shows how to record a programme on a single day. To record a programme at the same time on every day or to record it on one certain day of each week, follow the procedure described below.

After setting the day and month press the STORE button. The programme indicator flashes and the display shows both start and stop times in a few seconds. Then display shows start time and date. Finally the display returns to normal together with lighting programme number.



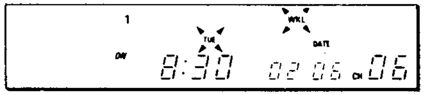
NOTES:
To record a programme at the same time every day of week or to record a programme on a specified day at the same time each week, perform the following step instead of step 6 above.

To record at the same time every day of the week
Press the Reverse SET (–) button **once**. All day indicators light.
If you press the button twice or more, press the button until all day indicators light. Hold down the button to advance rapidly.



Then press the STORE button.

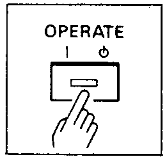
To record at the same time on a specified day each week
Press the Reverse SET (–) button until the desired day indicator lights along with letters "WKL". Hold down the button to advance it rapidly.



Then press the STORE button.

Now, one programme has been completed.

7 Turn off the OPERATE switch. The "⊙" indicator will come on.



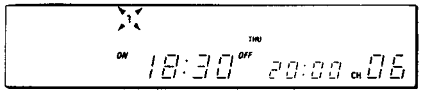
Notes:

1. If the erase prevention tab is removed, the cassette is ejected automatically and "⊙" indicator will flash. Stick a piece of cellophane tape over the erase prevention hole on the cassette to enable recording.
2. The "⊙" indicator will flash, if a cassette is not inserted.

To stop timer recording
Press the OPERATE switch and then press the STOP button within 8 seconds.

To clear a programme

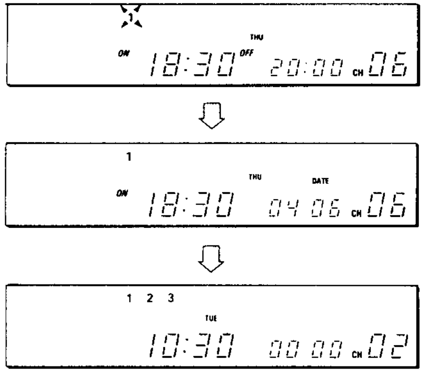
1 Press the Forward SET button (+) until a programme number (and start/stop times) to be cleared appears.



2 Press the CLEAR button.
The display returns to the clock time display and the cleared programme number disappears.
Be sure to press the CLEAR button while the display shows the start/stop times or start time/start date. The programming does not clear if the CLEAR button is pressed after the display has returned to the clock time display.

To check programming

Press the Forward SET button (+).
The programme indicator "1" flashes. If the programme No. 1 has been already programmed, both start and stop times are displayed. After a few seconds the display shows start time and start date. The display then automatically returns to the present time of day. When the clock display reappears, press the Forward SET button (+) again to check the next programme.
If that programme number has not been used, only programme number will appear.

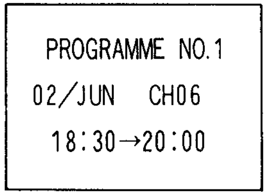


Programming errors

If programmes overlap, the VTR will select the programme with the earlier start time. When that programme is over, the VTR will switch to the next programme. If the start times are the same, the VTR will select the programmes in numerical order.

NOTE: If a power failure occurs, the programmed information will be maintained. However, if the power failure continues for 15 minutes or longer, the present time will be erased.
Set the clock correctly.

NOTE: When the information programmed by operating the remote control unit provided is transferred to the VTR, the programmed information is displayed on the TV screen for about 8 seconds.



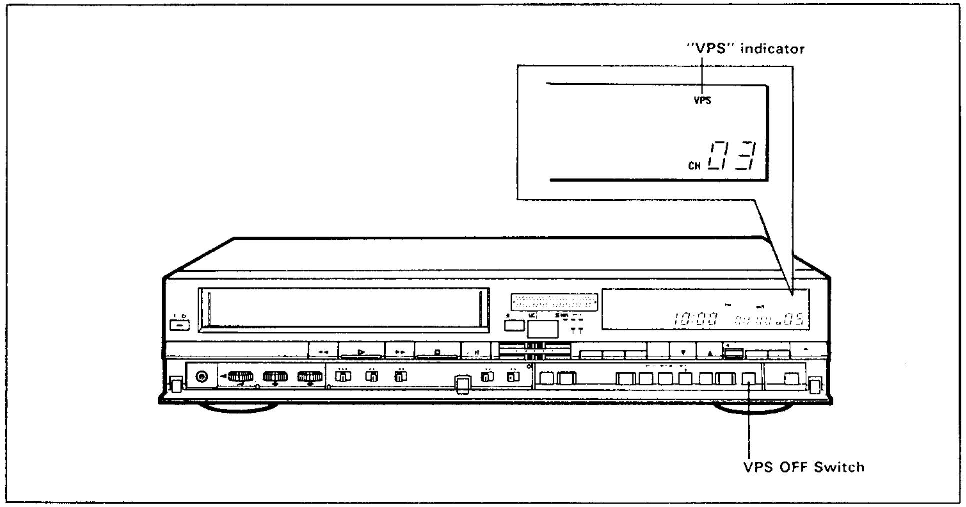
PROGRAMME NO.1
02/JUN CH06
18:30→20:00

VPS (Video Programme System) FUNCTION [For VT-S85E(VPS)]

This VTR incorporates the VPS function.
If the VTR is tuned to a TV station transmitting a VPS signal, the VTR automatically takes any delay, earliness or extension of the programme into account and can record the specified programme.
For example, assume that you programme the timer for a football game on channel 8 from 19:00 to 20:45 on Saturday and the football game which is broadcast is changed to 21:00 to 23:00, the VPS function works and the VTR records the football game automatically from 21:00 to 23:00.
When the VTR is tuned to a station transmitting a VPS signal, "VPS" automatically appears in the display of the VTR.
Programming the timer for unattended recording automatically turns on the VPS function.

NOTES:

1. To switch off the VPS function, press the VPS OFF switch once during programming of the timer so the "VPS" display disappears.
   Pressing the switch again turns VPS on.
   Use the UP CHANNEL button on the remote control unit when programming the timer using the remote control unit.
2. Always programme the timer for one TV programme to record the programme with the VPS function turned on. If you programme the timer for a football game and a movie on channel 3 sequentially from 10:00 to 14:00 for example, only the football game will be recorded but the movie will not.
   In this case, programme the timer with the VPS off or input the other programme using another programme number to turn the VPS function on again.
3. When the VTR is tuned to a station transmitting a VPS signal but the signal conditions are poor, "VPS" will flash in the display.
   In this case, programme the timer with VPS turned off. If you programme the timer with VPS turned on, the VPS function does not operate normally.
4. This function can also be used during ordinary recording as an auto stop function. When the VTR is recording a TV programme transmitting the VPS signal, the VPS indicator will light automatically; press the VPS OFF button at this time. The VPS indicator will change to flashing. When the TV programme ends, the recording will stop automatically and the VTR will enter the stop mode.



DISASSEMBLY

1. IDENTIFICATIONS AND LOCATIONS OF CIRCUIT BOARDS

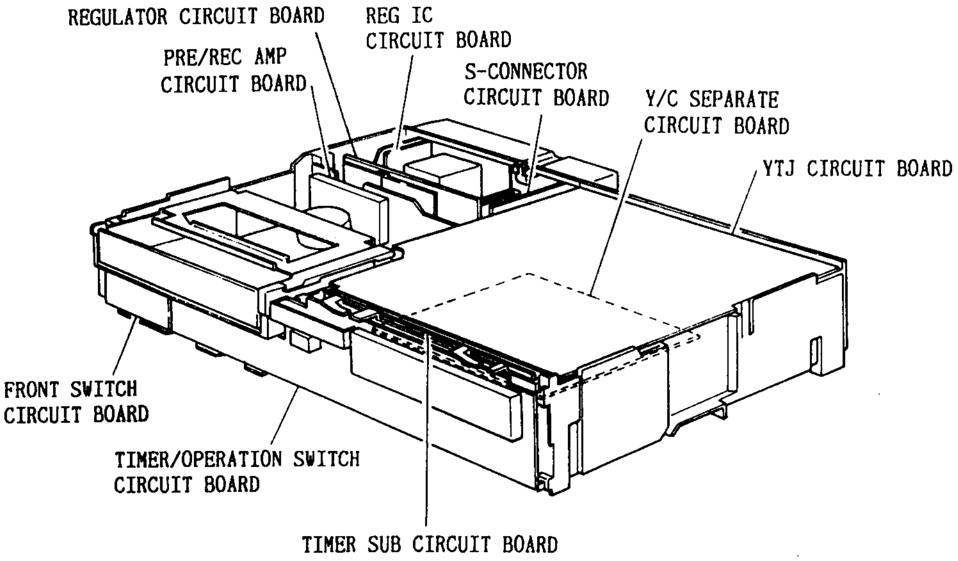

REGULATOR CIRCUIT BOARD
REG IC CIRCUIT BOARD
PRE/REC AMP CIRCUIT BOARD
S-CONNECTOR CIRCUIT BOARD
Y/C SEPARATE CIRCUIT BOARD
YTJ CIRCUIT BOARD
FRONT SWITCH CIRCUIT BOARD
TIMER/OPERATION SWITCH CIRCUIT BOARD
TIMER SUB CIRCUIT BOARD

Fig. 1-1 Top View

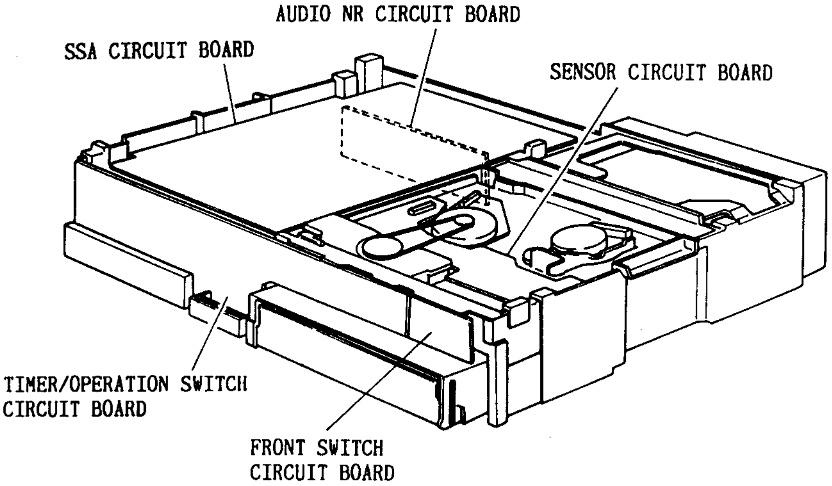
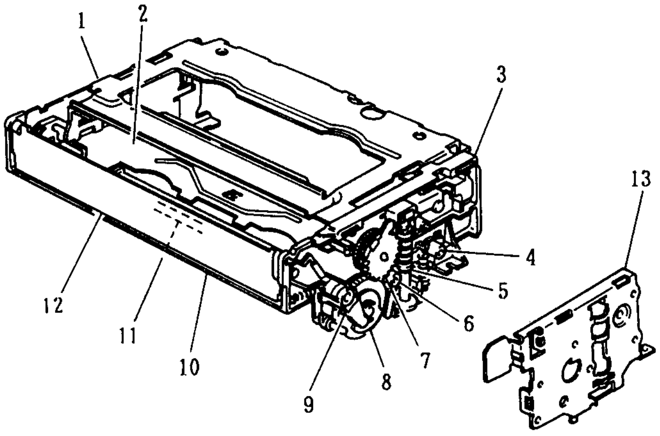

AUDIO NR CIRCUIT BOARD
SSA CIRCUIT BOARD
SENSOR CIRCUIT BOARD
TIMER/OPERATION SWITCH CIRCUIT BOARD
FRONT SWITCH CIRCUIT BOARD

Fig. 1-2 Bottom View

2. IDENTIFICATIONS AND LOCATIONS OF MAIN MECHANICAL COMPONENTS


1
2
3
4
5
6
7
8
9
10
11
12
13

1. CHASSIS HOLDER
2. CASSETTE HOLDER
3. GEAR BRACKET
4. SWITCH LEVER B
5. FL WORM GEAR
6. SWITCH LEVER A
7. WORM WHEEL
8. DRIVE GEAR
9. DOOR ARM
10. FRONT HOLDER
11. SHAFT PIN
12. CASSETTE DOOR
13. SIDE CHASSIS

Fig. 2-1 Cassette Loading Mechanism

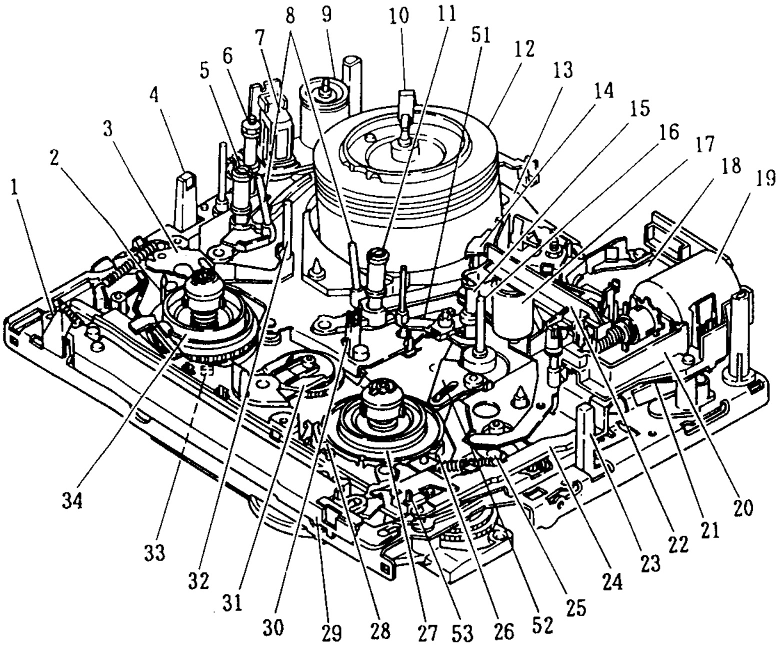


Fig. 2-2 Top View of Mechanism

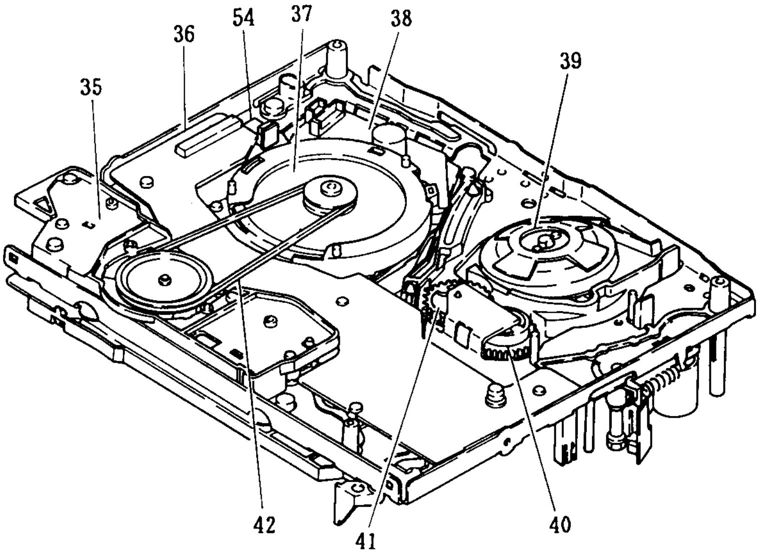


Fig. 2-3 Bottom View of Mechanism

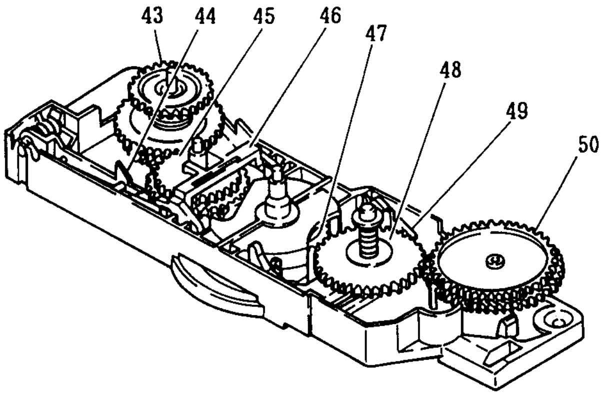


Fig. 2-4 Clutch Base

1. SAFETY ARM
2. TENSION BAND ASSEMBLY
3. TENSION ARM
4. SUPPLY REEL SENSOR
5. SUPPLY GUIDE ROLLER
6. SUPPLY GUIDE POLE
7. FULL ERASE HEAD
8. ANGLE POSTS
9. IMPEDANCE ROLLER
10. STATIC DISCHARGE BRUSH
11. TAKE-UP GUIDE ROLLER
12. CYLINDER MOTOR ASSEMBLY
13. CYLINDER BASE
14. AUDIO/CONTROL (A/C) HEAD
15. TAKE-UP POLE
16. CAPSTAN SHAFT
17. PRESSURE ROLLER ASSEMBLY
18. MECHANISM STATE SWITCH
19. LOADING MOTOR ASSEMBLY
20. LOADING MOTOR HOLDER
21. LOAD BRACKET
22. CASSETTE LID OPENER
23. TAKE-UP REEL SENSOR
24. BRAKE LINK ARM
25. PRESSURE ROLLER OPERATION ARM
26. TAKE-UP BRAKE ASSEMBLY
27. TAKE-UP REEL DISK
28. TAKE-UP MAIN BRAKE
29. SLIDER BLOCK ASSEMBLY
30. END LAMP
31. REEL DRIVE IDLER
32. TENSION POLE
33. SUPPLY MAIN BRAKE
34. SUPPLY REEL DISK
35. CLUTCH BASE ASSEMBLY
36. SENSOR P.C.B
37. CAPSTAN MOTOR
38. CAPSTAN MOTOR P.C.B
39. CYLINDER MOTOR ASSEMBLY
40. SUPPLY LOADING GEAR
41. TAKE-UP LOADING GEAR
42. REEL BELT
43. TAKE-UP GEAR
44. CLUTCH ARM
45. CHANGE GEAR
46. CHANGE ARM
47. TAKE-UP PULEY
48. FL CHANGE GEAR
49. FL CHANGE ARM
50. RELAY GEAR
51. HALF LOADING ARM
52. RELAY ARM
53. S-VHS SWITCH
54. POWER TR P.C.B

3. CASE REMOVAL

1. Preset Door
2. Top Cover
3. Bottom Cover
4. Front Panel
5. Rear Panel
6. Remote Controller

The numbers in parantheses in the illustrations show the order of removal.

1. Preset Door (Fig. 3-1)

1) Open the preset door and, while depressing the attachment sections, pull the door in the direction of the arrows.

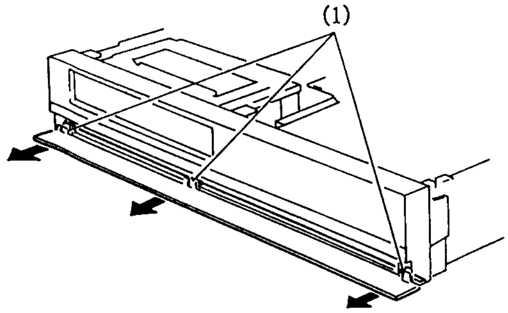


Fig. 3-1 Preset Door

2. Top Cover (Fig. 3-2)

1) Remove five (5) screws.
2) Lift up the rear of the top cover and slide the entire cover backwards.

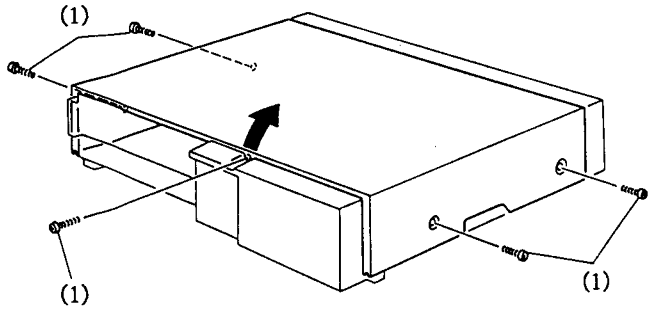


Fig. 3-2 Top Cover

3. Bottom Cover (Fig. 3-3)

1) Remove three (3) screws to take out the bottom supports on the left and right.
2) Remove five (5) screws. Lift up the rear of the bottom cover.

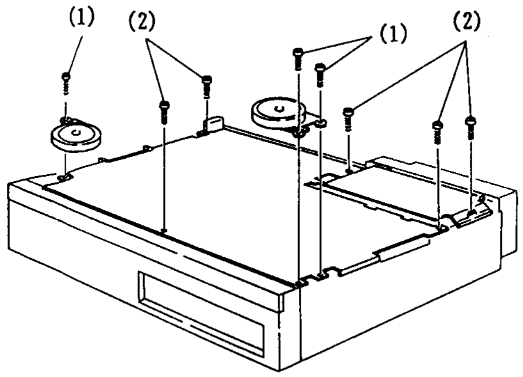


Fig. 3-3 Bottom Cover

4. Front Panel (Fig. 3-4)

1) Remove the preset door and the top and bottom covers. (See items 1,2 and 3)
2) Release eight (8) stoppers.
3) Pull out the bottom of the front panel and remove the entire panel.

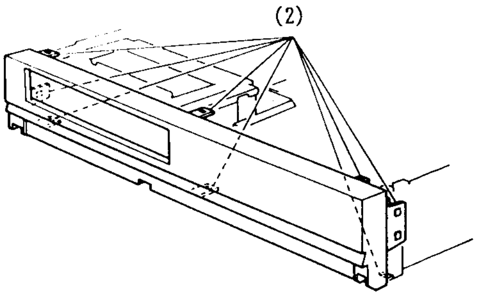


Fig. 3-4 Front Panel

5. Rear Panel (Fig. 3-5)

1) Remove the top cover. (See item 2)
2) Open the YTJ circuit board. (See item 3 in the section on circuit board removal)
3) Remove two (2) nylon rivets.
4) Remove one (1) screw holding the video jacks and remove two (2) screws holding the EURO connector.
5) Remove two (2) screws holding the rear panel.
6) Release one (1) stopper holding the RF converter and pull out the rear panel backwards.

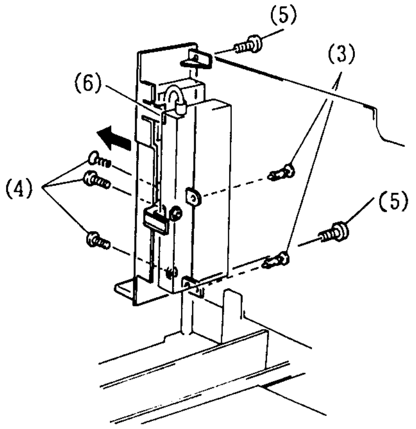


Fig. 3-5 Rear Panel

6. Remote Controller (Fig. 3-6)

1) Remove the battery compartment.
2) Remove one (1) screw inside the battery compartment.
3) Release eight (8) tabs.

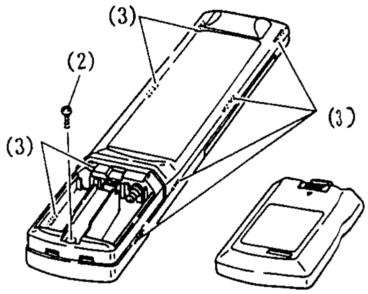


Fig. 3-6 Remote Controller

4. CIRCUIT BOARD REMOVAL

1. Timer/Operation Switch Circuit Boards
2. Timer Sub Circuit Board
3. YTJ Circuit Board
4. SSA Circuit Board
5. Audio NR Circuit Board
6. Regulator Circuit Board
7. Pre/Rec Amp Circuit Board
8. S-Connector Circuit Board
9. Y/C Separate Circuit Board
10. Sensor Circuit Board

1. Timer/Operation Switch, Front Switch Circuit Boards (Fig. 4-1)

1) Remove the top, bottom covers and front panel.
   (See items 2 to 4 in the section on case removal)
2) Release eight (8) stoppers and remove the block containing the timer and timer sub circuit boards.
3) Disconnect six (6) flat cables from the timer sub circuit board.
4) Release three (3) stoppers holding the circuit board holder.
5) Remove one screw (1) holding the ground wire.

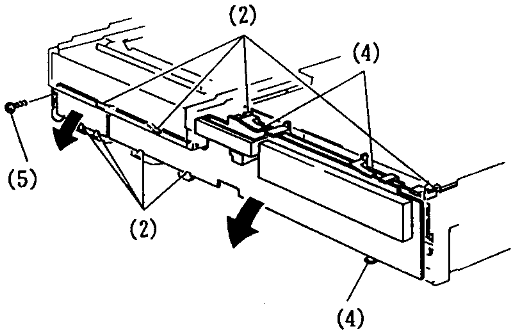


Fig. 4-1 Timer/Operation Switch, Front Switch Circuit Boards

2. Timer Sub Circuit Board (Fig. 4-2)

1) Remove the top and bottom covers, front panel, preset door and the rear panel.
   (See items 1 to 5 in the section on case removal)
2) Remove the block containing the timer and timer sub circuit boards. (See item 1)
3) Disconnect six (6) flat cables and seven (7) connectors from the timer sub circuit board.
4) Release two (2) stoppers holding the circuit board holder and tilt the top of the timer sub circuit board to remove it.

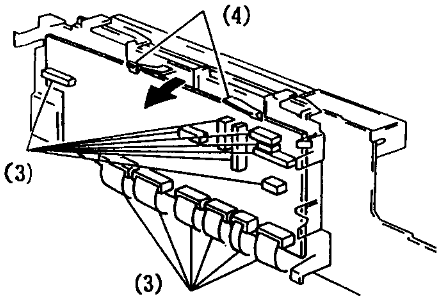


Fig. 4-2 Timer Sub Circuit Board

3. YTJ Circuit Board (figs. 4-3, 4-4)

1) Remove the top cover. (See item 2 in the section on case removal)
2) Remove two (2) screws.
3) Release four (4) stoppers and open the YTJ circuit board in the direction of the arrow.
4) Disconnect seventeen (17) connectors and one (1) flat cable.

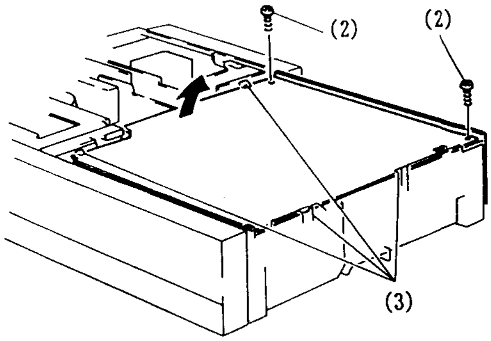


Fig. 4-3 YTJ Circuit Board(I)

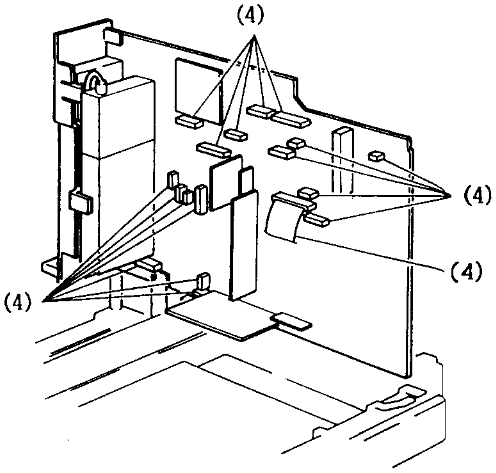


Fig. 4-4 YTJ Circuit Board(II)

4. SSA Circuit Board (Figs. 4-5, 4-6)

1) Remove the top and bottom covers. (See items 2 and 3 in the section on case removal)
2) Remove one (1) screw.
3) Release four (4) stoppers holding the circuit board and open the circuit board in the direction of the arrow.
4) Disconnect the connector from the YTJ circuit board.
5) Disconnect seventeen (17) connectors.
6) Disconnect one flat cable.

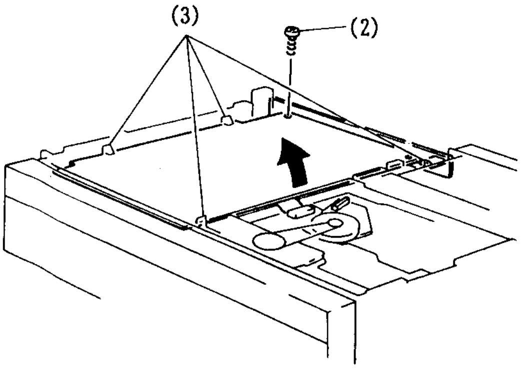


Fig. 4-5 SSA Circuit Board(I)

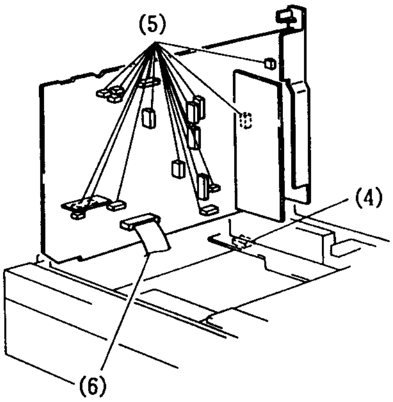


Fig. 4-6 SSA Circuit Board(II)

5. Audio NR Circuit Board (Fig. 4-7)

1) Remove the bottom cover. (See item 3 in the section on case removal)
2) Open the SSA circuit board. (See item 4)
3) Pull out the audio NR circuit board in the direction of the arrow.

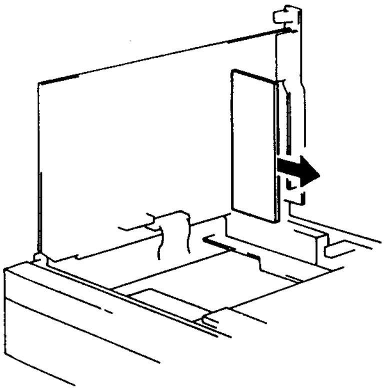


Fig. 4-7 Audio NR Circuit Board

6. Regulator Circuit Board (Figs. 4-8 to 4-10)

1) Remove the top cover. (See item 2 in the section on case removal)
2) Remove one (1) screw holding the bottom cover.
3) Release two (2) stoppers to remove the rear piece.
4) Remove three (3) screws and lift up the regulator circuit block to pull it out.
5) Disconnect four (4) connectors from the regulator circuit board.
6) Remove two (2) regulator IC retaining screws.
7) Remove four (4) screws holding the power transformer.
8) Remove one (1) screw holding the regulator circuit board and remove the circuit board and power transformer from the regulator holder.
9) Release three (3) P.C.B supports and open the regulator circuit board in the direction of the arrow for servicing.

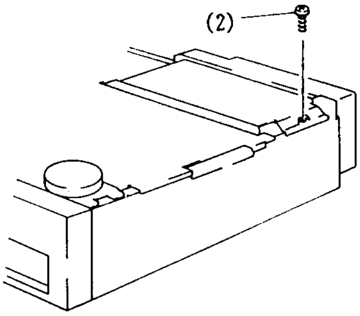


Fig. 4-8 Regulator Circuit Block(I)

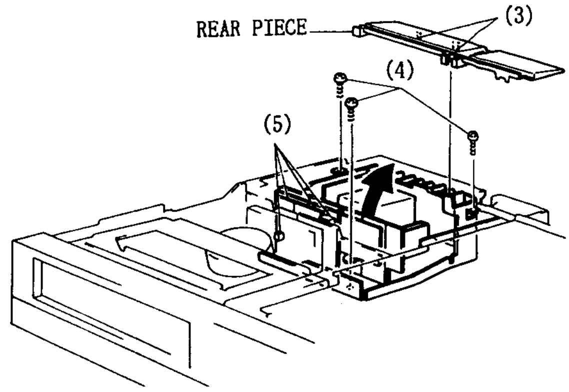


Fig. 4-9 Regulator Circuit Block(II)

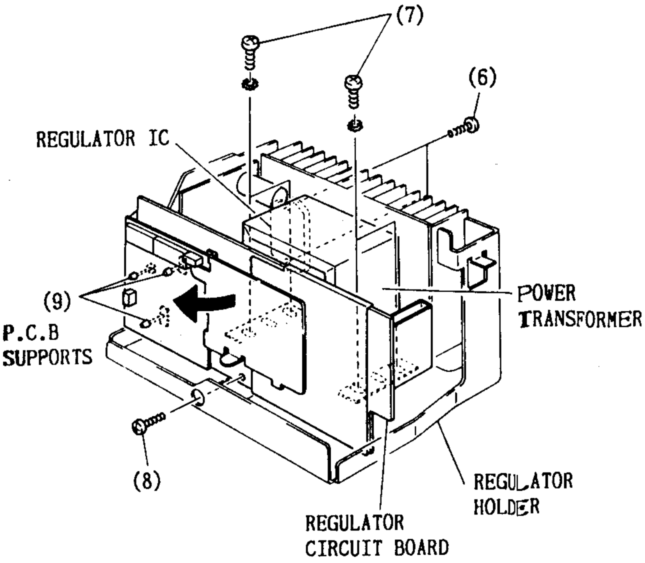


Fig. 4-10 Regulator Circuit Board(III)

7. Pre/Rec Amp Circuit Board (Fig. 4-11)
 1) Remove the top cover. (See item 2 in the section on case removal)
 2) Disconnect three (3) connectors.
 3) Remove one (1) screw.
 4) Disconnect the connector connected to the cylinder motor while lifting up the pre/rec amp circuit board.

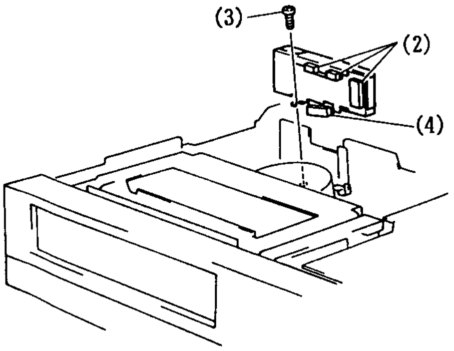


Fig. 4-11 Pre/Rec Amp Circuit Board

8. S-Connector Circuit Board (Fig. 4-12)
 1) Remove the top cover. (See item 2 in the section on case removal)
 2) Release two (2) stoppers to remove the rear piece.
 3) Pull out the S-Connector circuit board in the direction of the arrow.
 4) Disconnect two (2) connectors.

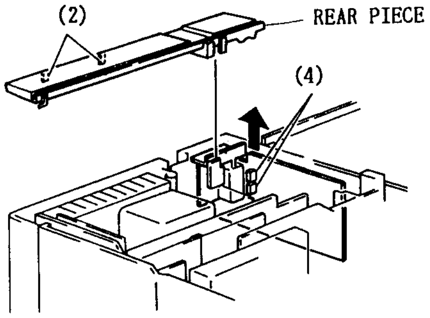


Fig. 4-12 S-Connector Circuit Board

9. Y/C Separate Circuit Board (Fig. 4-13)
 1) Remove the top cover. (See item 2 in the section on the case removal)
 2) Open the YTJ circuit board. (See item 4)
 3) Disconnect three (3) connectors.
 4) Disconnect one flat cable.
 5) Release three (3) stoppers and pull out the Y/C separate circuit board.

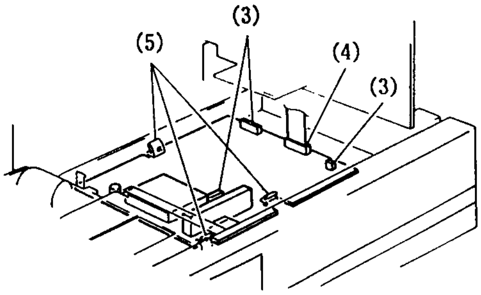


Fig. 4-13 Y/C Separate Circuit Board

10. Sensor Circuit Board (Fig. 4-14)
 1) Remove the bottom cover. (See item 3 in the section on case removal)
 2) Remove the reel belt.
 3) Disconnect the flat cable.
 4) Disconnect the connector from the cylinder motor circuit board.
 5) Remove four (4) screws and lift up the sensor circuit board.

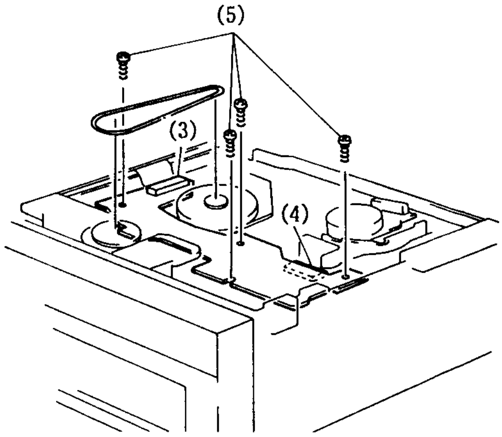


Fig. 4-14 Sensor Circuit Board

5. CASSETTE LOADING MECHANISM REMOVAL

1. Cassette Loading Mechanism and Cassette Door
   * Components listed below are described as if the top and bottom covers, front panel and the cassette loading mechanism have already been removed. (See items 2, 3 and 4 in the section on case removal and item 1 in the section on cassette loading mechanism removal.)
2. Loading Gear Assembly, Chassis Holder, Cassette Holder Assembly and Front Holder
3. Cassette Holder Base and Cassette Holder (L/R)

1. Cassette Loading Mechanism Assembly and Cassette Door (Fig. 5-1)

Cassette Loading Mechanism Assembly
 1) Remove the top cover and front panel. (See items 2 and 4 in the section on case removal.)
 2) Remove two (2) screws.
 3) Lift up the rear of the cassette loading mechanism assembly and release the fittings on the front bottom.

Cassette Door
 4) Push the left of the front holder outward in the direction of the arrow and remove the cassette door.

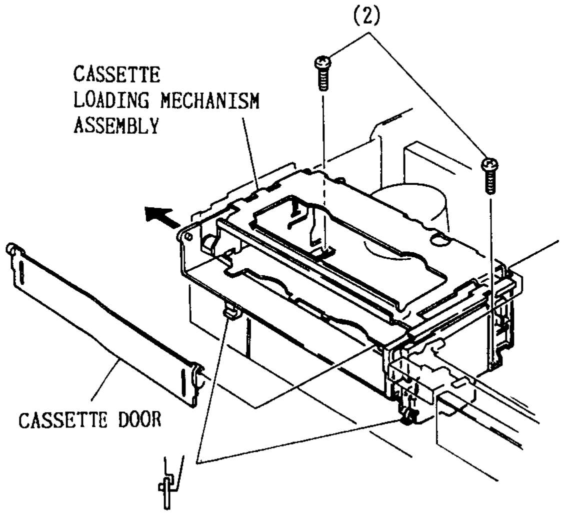

(2)
CASSETTE LOADING MECHANISM ASSEMBLY
CASSETTE DOOR

Fig. 5-1 Cassette Loading Mechanism Assembly and Cassette Door

2. Loading Gear Assembly, Chassis Holder, Cassette Holder Assembly and Front Holder

Loading Gear Assembly (Fig. 5-2)

1) Release two (2) tabs that engage with the chassis holder and one (1) tab that engages with the front holder, then separate the loading gear assembly.

Chassis Holder

2) Release two (2) tabs that engage with the front holder.

Cassette Holder Assembly

3) Separate the drive gear and remove the cassette holder assembly.

Front Holder

4) Remove the shaft pin and drive arm L.

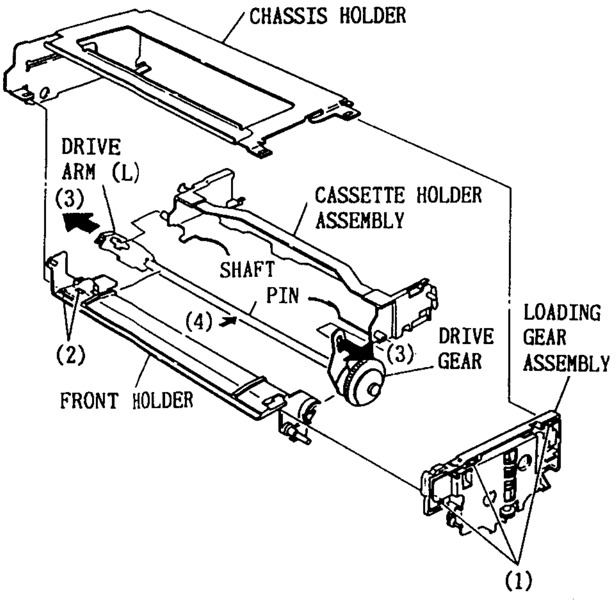

CHASSIS HOLDER
DRIVE ARM (L)
(3)
CASSETTE HOLDER ASSEMBLY
SHAFT PIN
(4)
(2)
FRONT HOLDER
(3)
DRIVE GEAR
LOADING GEAR ASSEMBLY
(1)

Fig. 5-2 Loading Gear Assembly, Chassis Holder, Cassette Holder Assembly and Front Holder

3. Cassette Holder Base and Cassette Holders (L/R) (Fig. 5-3)

Cassette Holder Base

1) Release four (4) tabs on the L/R cassette holders.

Cassette Holders (L/R)

2) Release the tabs on the cassette holders L/R and pull out the holders.

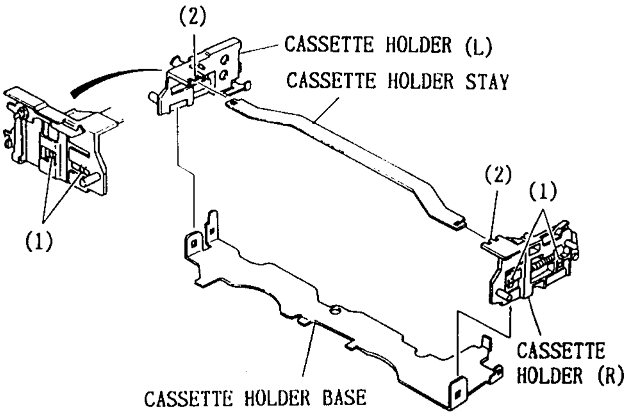

(2)
CASSETTE HOLDER (L)
CASSETTE HOLDER STAY
(1)
(2)
(1)
CASSETTE HOLDER (R)
CASSETTE HOLDER BASE

Fig. 5-3 Cassette Holder Base and Cassette Holders (L/R)

〔Cautions when reinstalling〕

Reinstall the components by the reverse procedure to removal, taking care of the following items.

* Check that two (2) bosses of the cassette holder are inserted into the grooves on the left of the chassis holder. (Fig. 5-4)
* When reinstalling the loading gear assembly, check that two (2) bosses of the cassette holder are inserted into the grooves on the right of the chassis holder. (Fig. 5-5)
* Check that marking (△) on the synchro gear and marking (◇) on the clutch gear are aligned. (Fig. 5-5)
* Check that the boss of cassette switch lever (A) is set to the cam of the synchro gear.
* When reinstalling the cassette door, check that the boss of the door arm is inserted into the groove in the cassette door.

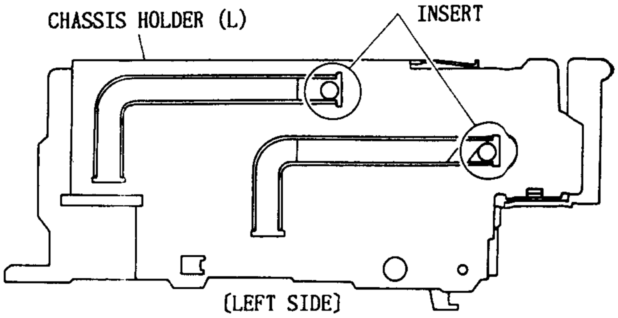

CHASSIS HOLDER (L)
INSERT
〔LEFT SIDE〕

Fig 5-4

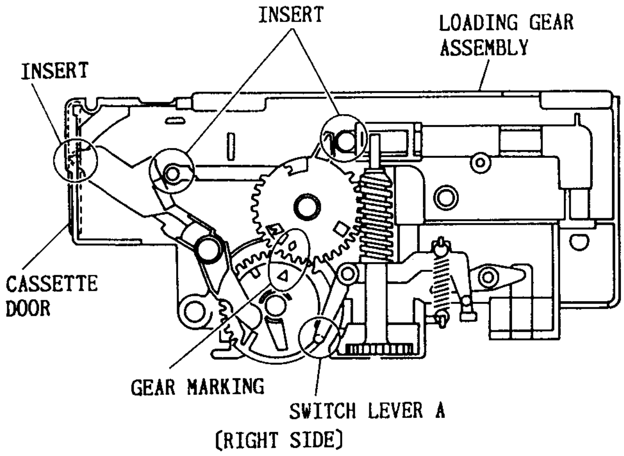


Fig. 5-5

6. LOADING GEAR REMOVAL

Side Chassis, FL Worm Gear, Door Arm, Worm Wheel and Switch Levers A/B (Fig. 6-1)

Side Chassis

1) Release four (4) tabs that engage with the loading gear assembly.

FL Worm Gear

2) Pull out the FL worm gear.

Door Arm

3) Remove the spring between the door arm and gear bracket.
4) Pull out the door arm.

Worm Wheel

5) Pull out the worm wheel.

Switch Levers A/B

6) Remove the spring between switch lever (A) and the gear bracket.
7) Pull out switch levers (A) and (B).

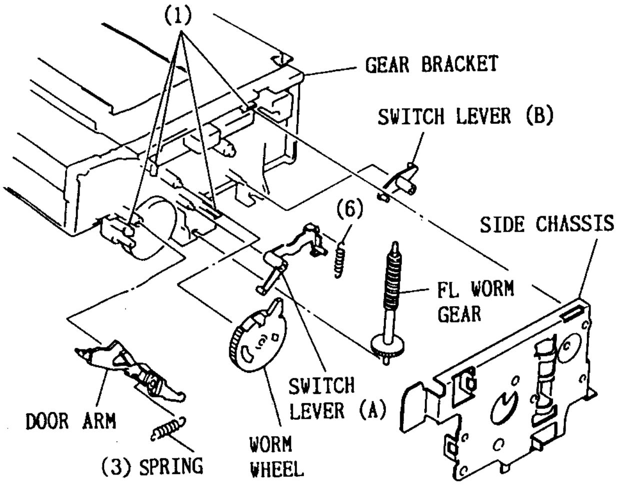


Fig. 6-1 Side Chassis, FL Worm Gear, Door Arm, Worm Wheel and Switch Levers A/B

7. MAIN MECHANICAL COMPONENTS REMOVAL

1. Heads
   - ° Impedance Roller/FE (Full Erase) Head
   - ° A/C (Audio/Control) Head
2. Cylinder Motor Assembly
3. Capstan Motor Assembly
4. Loading Motor, Mechanism State Switch Assembly
5. Tension Arm, Tension Band
6. Slider Block, Reel Drive Idler
7. Supply/Take-up Reel Disks, Half Loading Arm, Relay Arm and S-VHS detection switch
8. Rollers and Guides
   - ° Pressure Roller
   - ° Supply Guide Pole
   - ° Take-up Guide Pole
   - ° Supply/Take-up Guide Rollers
9. Loading Motor Assembly, Brake Link Arm and FS Brake Arm
10. Load Bracket Assembly and Take-up Brake
11. Brake Operation Arm, Mode Gear, Worm Wheel, Pressure Roller Operation Arm, Mode Change Arm and Brake Lift Arm
12. Cylinder Motor Base and Supply/Take-up Loading Arms
13. Take-up Pulley and Clutch Gear Assembly
14. Take-up Gear, Change Arm, Change Gear, FL Change Gear and FL Change Lever

Impedance Roller/FE (Full Erase) Head (Fig. 7-1)

1) Remove the top cover. (See item 2 in the section on case removal)
2) Remove the spring between the FE head base and chassis.
3) Disconnect the connector.
4) Remove the nut holding the guide pole and pull out the pole.
5) Release one (1) tab and remove the impedance roller/FE head.
6) To separate the FE head, release two (2) tabs and pull out the FE head.

A/C (Audio/Control) Head (Fig. 7-1)

7) Disconnect the connector.
8) Remove the nut holding the head base and pull the base up and out.
   * Hook the bottom of the spring under the head base to the chassis and the top to the stopper of the head base.

(Cautions when reinstalling)

* Check that the spring section of the A/C head retaining screw protrudes 6.3 mm above head base (1)
* Check that head bases (1) and (2) are parallel.

(Adjustments after reinstallation)

A/C Head Adjustment
X-Value Adjustment
Audio Playback Level Adjustment
Audio Bias Level Adjustment

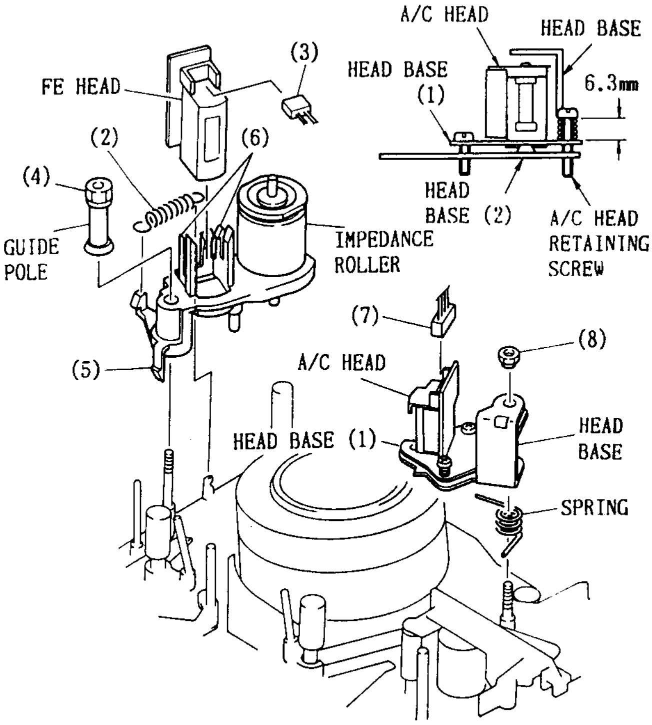

A/C HEAD
HEAD BASE
(3)
HEAD BASE
(1)
6.3mm
FE HEAD
(2)
(6)
(4)
HEAD
BASE (2)
A/C HEAD
RETAINING
SCREW
GUIDE
POLE
IMPEDANCE
ROLLER
(7)
(8)
(5)
A/C HEAD
HEAD
BASE
HEAD BASE (1)
SPRING

Fig. 7-1 Impedance Roller/FE (Full Erase) Head, A/C (Audio/Control) Head

2. Cylinder Motor Assembly (Fig. 7-2)
   1) Remove the top cover. (See item 2 in the section on case removal)
   2) Remove one (1) screw and static discharge brush.
   3) Pull out the pre/rec amp circuit board. (See item 4 in the section on circuit board removal)

   (Bottom Side)

   4) Remove the bottom cover. (See item 3 in the section on case removal)
   5) Disconnect the connector from the cylinder motor circuit board.
   6) Remove three (3) screws holding the cylinder.

   (Top Side)

   7) Pull out the cylinder motor assembly upward.

[Cautions during work]

- * Place the side of the unit down as the screws are in the reverse positions to the direction in which the cylinder is removed.
- * Do not touch the video head tips with fingers or tools.

[Adjustments after reinstallation]

Adjustments after replacing the cylinder

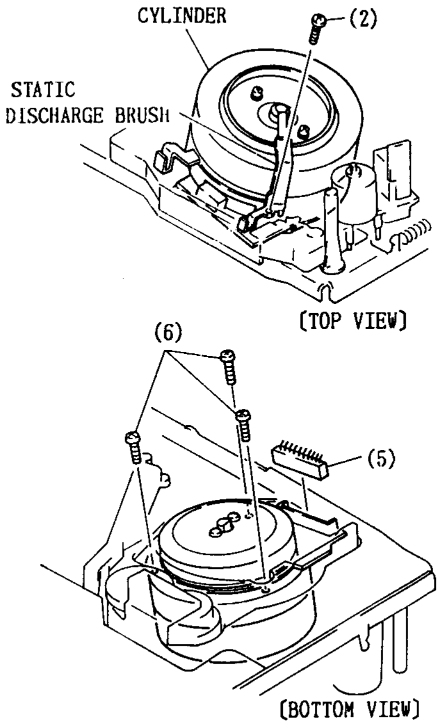

CYLINDER
(2)
STATIC
DISCHARGE BRUSH
[TOP VIEW]
(6)
(5)
[BOTTOM VIEW]

Fig. 7-2 Cylinder Motor Assembly

3. Capstan Motor Assembly (Fig. 7-3)
   1) Remove the bottom cover. (See item 3 in the section on case removal)
   2) Remove the reel belt.
   3) Disconnect two (2) connectors.
   4) Remove one (1) screw and the power transistor circuit board.
   5) Remove three (3) screws and pull out the capstan motor assembly.

   * Keep the capstan shaft clean when removing and reinstalling the capstan motor.

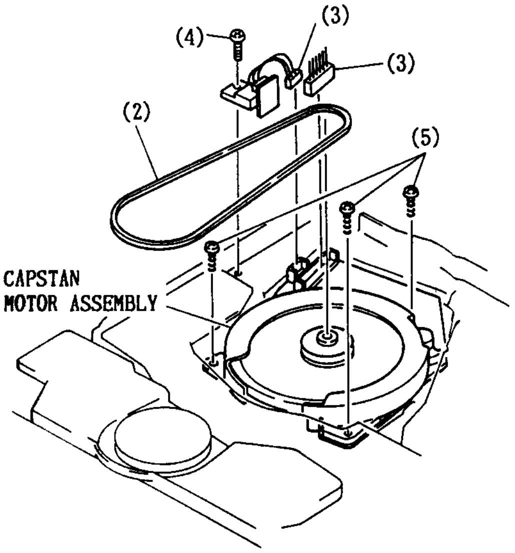

(3)
(4)
(3)
(2)
(5)
CAPSTAN
MOTOR ASSEMBLY

Fig. 7-3 Capstan Motor Assembly

4. Loading Motor/Mechanism State Switch Assembly (Fig. 7-4)
   1) Remove the top cover. (See item 2 in the section on case remval)
   2) Release one (1) tab and remove the cassette lid opener.
   3) Disconnect the connector.
   4) Release two (2) tabs holding the mechanism state switch.
   5) Release four (4) tabs, and while releasing two (2) bosses of the motor holder from the screw holes in the motor, lift up the loading motor/mechanism state switch assembly.

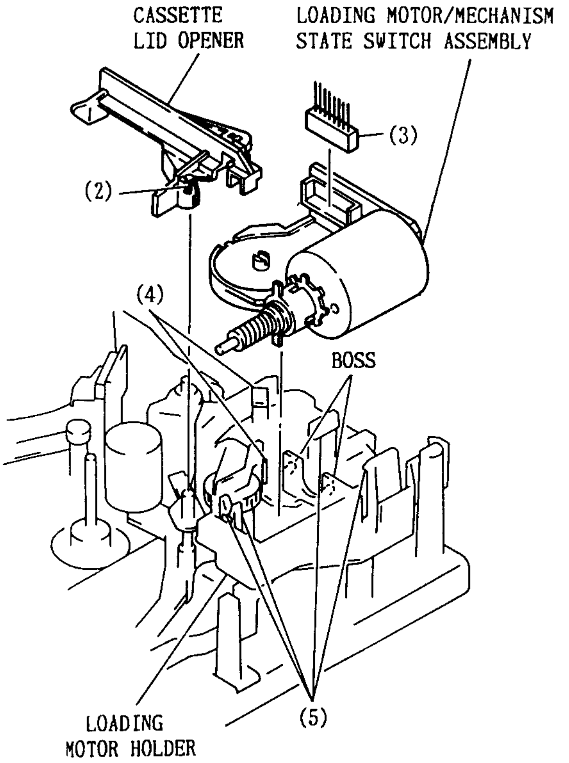

CASSETTE
LID OPENER
LOADING MOTOR/MECHANISM
STATE SWITCH ASSEMBLY
(3)
(2)
(4)
BOSS
LOADING
MOTOR HOLDER
(5)

Fig. 7-4 Loading Motor/Mechanism State Switch Assembly

* Components 5 - 11 listed below will be discribed as if the top and bottom covers, front panel and the cassette loading mechanism have already been removed. (See items 2, 3 and 4 in the section on case removal and item 1 in the section on cassette loading mechanism removal)

5. Tension Arm/Tension Band (Fig. 7-5)
   1) Remove the spring between the tension arm and spring holder.
   2) Remove the screw holding the tension band.
   3) Release the fitting with the tension arm, move the supply subbrake in the direction of the arrow and remove the tension band and tension arm.

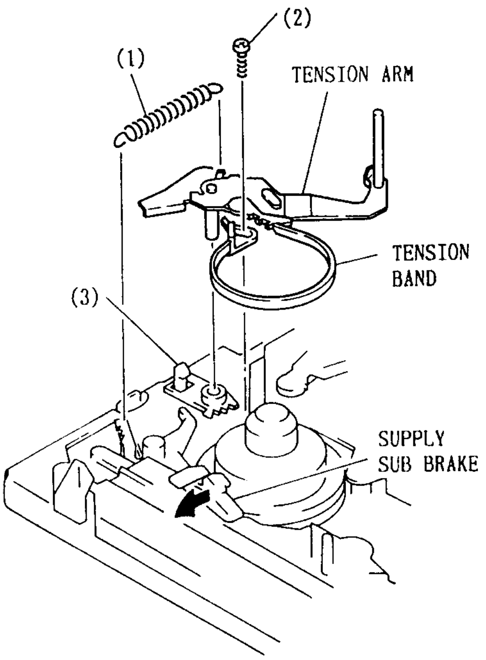

(2)
(1)
TENSION ARM
TENSION
BAND
(3)
SUPPLY
SUB BRAKE

Fig. 7-5 Tension Arm/Tension Band

6. Slider Block and Reel Drive Idler
   Slider Block (Fig. 7-6)
   1) Remove two (2) screws.

[Cautions when reinstalling]
   * Reinstall the slider block while pressing both subbrakes and the main brake in the directions of the arrows (A/B).
   * Check that the bosses of the load bracket assembly are inserted into the sliders.

   Reel Drive Idler (Fig. 7-6)
   2) Pull out the reel drive idler from the take-up gear shaft.

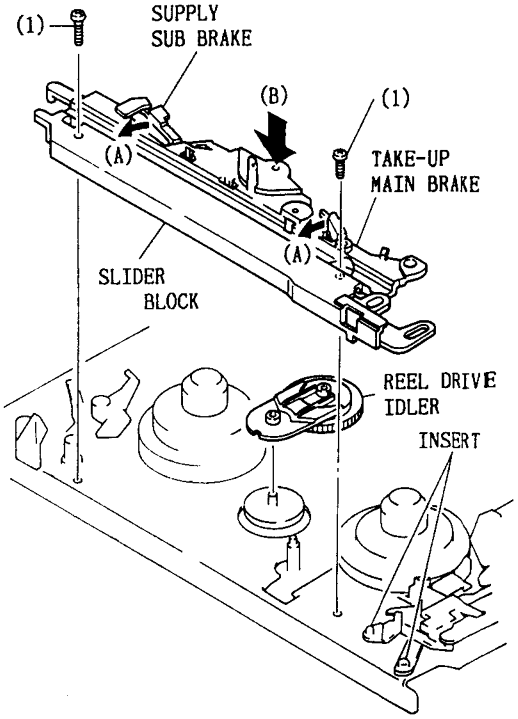

(1)
SUPPLY
SUB BRAKE
(B)
(1)
(A)
TAKE-UP
MAIN BRAKE
(A)
SLIDER
BLOCK
REEL DRIVE
IDLER
INSERT

Fig. 7-6 Slider Block and Reel Drive Idler

7. Supply/Take-up Reel Disks, Half Loading Arm, Relay Arm and S-VHS switch

Supply Reel Disk (Fig. 7-7)

1) Remove the slider block. (See item 6)
2) Remove the tension arm and tension band. (See item 5)
3) Pull out the supply reel disk.

[Caution when reinstalling]

* Check that a spacer is put on the reel disk installation shaft.

[Adjustments after reinstallation]

Tension Pole Position and Tension Adjustments
Reel Disk Height Adjustment

Take-up Reel Disk (Fig. 7-7)

4) Move the take-up brake in the direction of the arrow and pull out the take-up reel disk.

[Caution when reinstalling]

* Check that a spacer is put on the reel disk installation shaft.

[Adjustments after reinstallation]

Reel Disk Height Adjustment

Half Loading Arm

5) Remove the washer and pull out the arm upward.

* Hook the bottom of the spring under the half loading arm to the stopper of the take-up guide pole and the top to the stopper of the half loading arm.

Relay Arm

6) Release one (1) tab in the direction of the arrow and remove the relay arm.

S-VHS Switch

7) Remove two (2) screws.
8) Release one (1) stopper and pull out the S-VHS switch from the connector on the sensor circuit board.

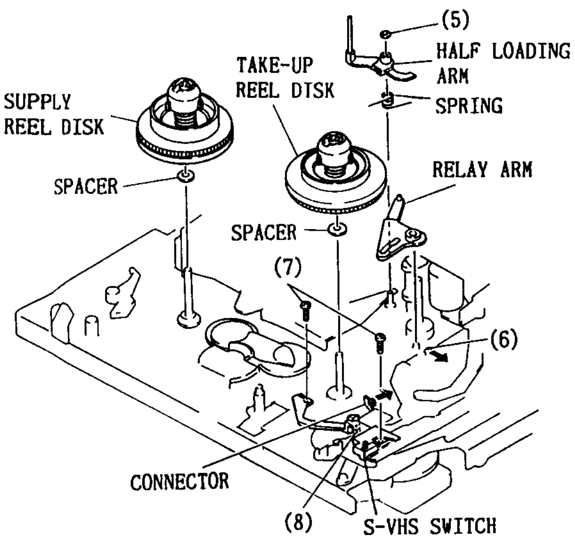

(5)
HALF LOADING ARM
TAKE-UP REEL DISK
SUPPLY REEL DISK
SPRING
SPACER
RELAY ARM
SPACER
(7)
(6)
CONNECTOR
(8)
S-VHS SWITCH

Fig. 7-7 Supply/Take-up Reel Disks, Half Loading Arm, Relay Arm and S-VHS Switch

8. Rollers and Guides (Fig. 7-8)

Pressure Roller

1) Release one (1) tab and remove the cassette lid opener.
2) Pull out the pressure roller assembly.

[Cautions when reinstalling]

* Check that the pin of the pressure roller is inserted into the hole in the pressure roller operation arm.
* Clean the tape contact surface of the pressure roller.

Supply Guide Pole

3) Loosen the guide pole retaining screw and pull out the guide pole.

[Caution when reinstalling]

* Clean the tape contact surface of the guide pole.

[Adjustment after reinstallation]

Guide Pole Height Adjustment

Take-up Guide Pole

4) Loosen the take-up guide pole retaining screw and pull out the guide pole.

[Caution when reinstalling]

* Clean the tape contact surface of the guide pole.

[Adjustment after reinstallation]

Guide Pole Height Adjustment

Guide Rollers

* Remove the supply and take-up guide rollers by the same procedure.

5) Loosen the guide roller retaining hexagonal screw.
6) Turn the guide roller counterclockwise to pull it out.

[Adjustment after reinstallation]

Guide Roller Height Adjustment

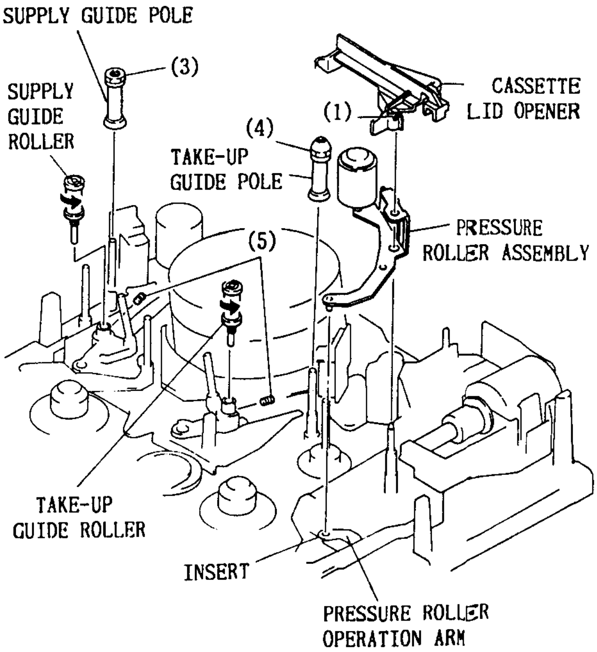

SUPPLY GUIDE POLE
(3)
SUPPLY GUIDE ROLLER
(4)
TAKE-UP GUIDE POLE
(1)
CASSETTE LID OPENER
(5)
PRESSURE ROLLER ASSEMBLY
TAKE-UP GUIDE ROLLER
INSERT
PRESSURE ROLLER OPERATION ARM

Fig. 7-8 Rollers and Guides

9. Loading Motor Block, Brake Link Arm and FS Brake Arm (Fig. 7-9)

Loading Motor Block

1) Release the tab and remove the cassette lid opener.
2) Disconnect the connector from the loading motor circuit board.
3) Remove two (2) screws and release three (3) tabs.
4) Remove the loading motor and motor holder while holding the section indicated by arrow (A) so that the load bracket assembly does not lift.

〔Adjustment after reinstallation〕
Mechanism State Switch Adjustment

Brake Link Arm

5) Remove the slider block. (See item 6)
6) Remove the take-up reel disk. (See item 7)
7) Remove the S-VHS detection switch. (See item 7)
8) Remove the spring between the brake link arm and load bracket.
9) Remove the brake link arm.

FS Brake Arm

10) Remove the spring between the FS brake arm and mechanism chassis.
11) Release one (1) tab and pull out the FS brake arm.

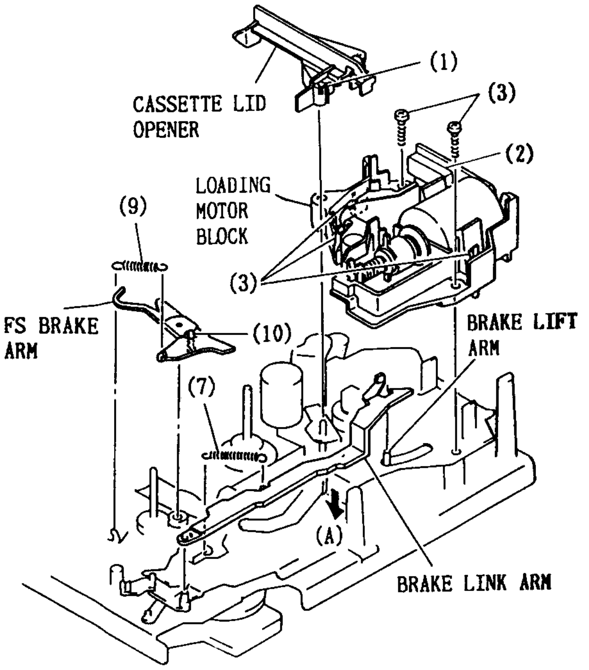


Fig. 7-9 Loading Motor Block, Brake Link Arm FS Brake Arm

10. Load Bracket Assembly and Take-up Brake

Load Bracket Assembly (Fig. 7-10)

1) Remove the slider block. (See item 6)
2) Remove the take-up reel disk. (See item 7)
3) Remove the pressure roller. (See item 8)
4) Remove the loading motor block. (See item 9)
5) Remove the S-VHS detection switch. (See item 7)
6) Remove the brake link arm. (See item 9)
7) Remove one (1) screw and draw the boss of the loading slide gear through the hole in the lift arm to lift up the assembly.

Take-up Brake (Fig. 7-10)

8) Remove the brake operation arm. (See item 11)
9) Release one (1) tab and remove the take-up brake.

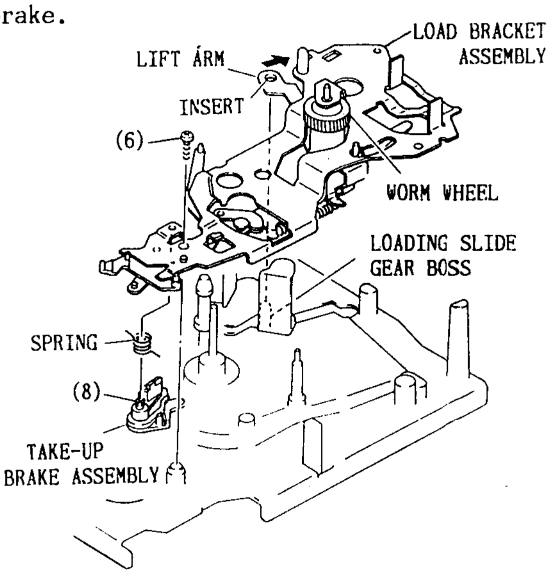


Fig. 7-10 Load Bracket Assembly and Take-up Brake

* Components in item 11 below will be described as if the load bracket assembly has already been removed. (See item 10)

11. Brake Operation Arm, Mode Gear, Worm Wheel, Pressure Roller Operation Arm, Mode Change Arm and Brake Lift Arm (Fig. 7-11)

Brake Operation Arm

1) Remove the washer and pull out the brake operation arm.

Mode Gear

2) Pull out the lift arm.
3) Pull out the mode gear.

Worm Wheel

4) Pull out the worm wheel.

Pressure Roller Operation Arm, Mode Change Arm

5) Remove the spring between the pressure roller operation arm and load bracket.
6) Pull out the pressure roller operation arm.
7) Release one (1) tab and pull out the mode change arm.

Brake Lift Arm

8) Pull out the brake lift arm.

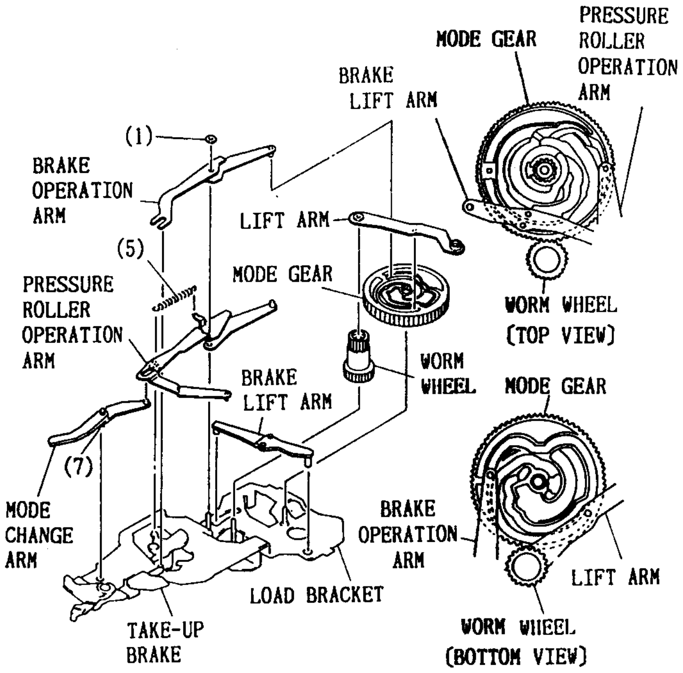

PRESSURE ROLLER OPERATION ARM
MODE GEAR
BRAKE LIFT ARM
(1)
BRAKE OPERATION ARM
LIFT ARM
(5)
PRESSURE ROLLER OPERATION ARM
MODE GEAR
WORM WHEEL (TOP VIEW)
BRAKE LIFT ARM
WORM WHEEL
MODE GEAR
(7)
MODE CHANGE ARM
BRAKE OPERATION ARM
LIFT ARM
LOAD BRACKET
TAKE-UP BRAKE
WORM WHEEL (BOTTOM VIEW)

Fig. 7-11 Brake Operation Arm, Mode Gear, Worm Wheel, Pressure Roller Operation Arm, Mode Change Arm and Brake Lift Arm

12. Cylinder Motor Base and Supply/Take-up Loading Arms (Fig. 7-12)

Cylinder Motor Base

1) Remove the cassette loading mechanism. (See item 1 in the section on cassette loading mechanism removal)
2) Remove the cylinder motor assembly. (See item 2)
3) Remove three (3) screws and take out the cylinder motor base.

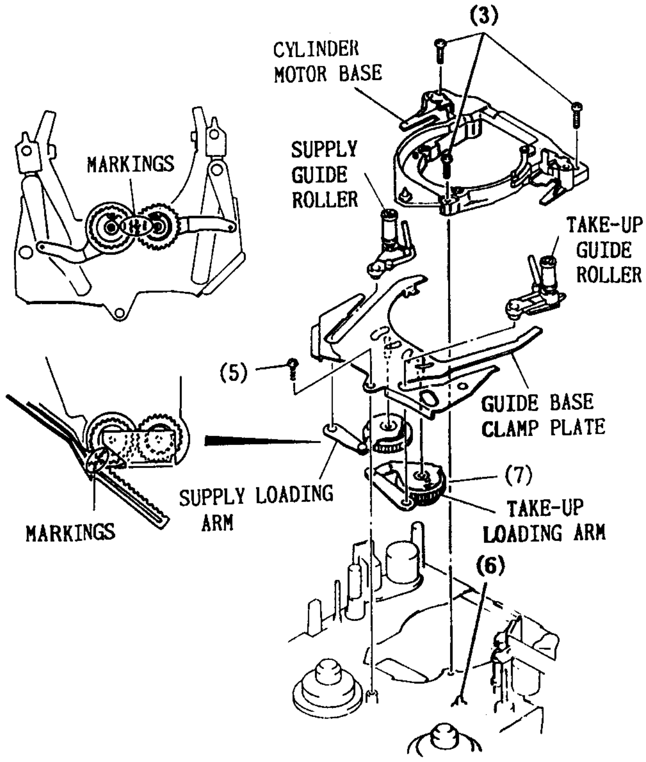

(3)
CYLINDER MOTOR BASE
MARKINGS
SUPPLY GUIDE ROLLER
TAKE-UP GUIDE ROLLER
(5)
GUIDE BASE CLAMP PLATE
(7)
TAKE-UP LOADING ARM
SUPPLY LOADING ARM
MARKINGS
(6)

Fig. 7-12 Cylinder Motor Base and Supply/Take-up Loading Arms

Supply/Take-up Loading Arms (Fig. 7-12)

4) Remove the half loading arm. (See item 7)
5) Remove one (1) screw.
6) Release one (1) tab and remove the guide base clamp plate with the supply/take-up guide rollers assembled on it.
7) Release one (1) tab and remove the take-up loading arm.
8) Remove the supply loading arm.

13. Take-up Pulley and Clutch Gear Assembly

Take-up Pulley (Fig. 7-13)

1) Release the reel belt.
2) Remove the washer and pull out the take-up pulley.

Clutch Gear Assembly (Fig. 7-13)

3) Remove the cassette loading mechanism. (See item 1 in the section on cassette loading mechanism removal)
4) Remove the slider block and reel drive idler. (See item 6)
5) Remove the reel belt in step 1 and remove three (3) screws.

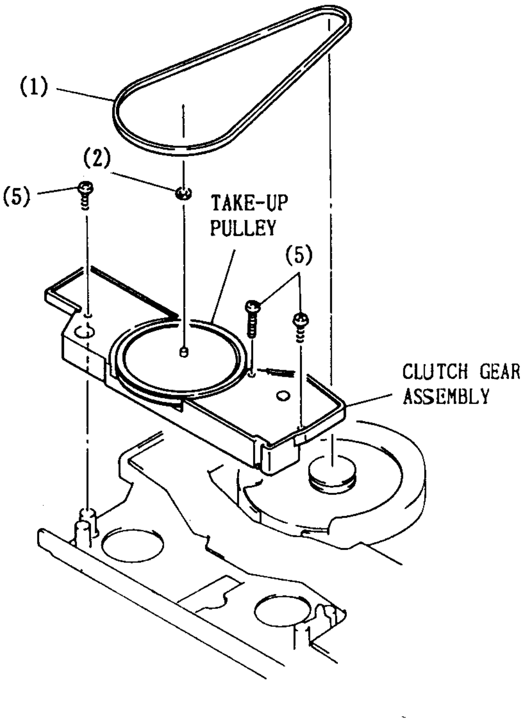

(1)
(2)
(5)
TAKE-UP PULLEY
(5)
CLUTCH GEAR ASSEMBLY

Fig. 7-13 Take-up Pulley and Clutch Gear Assembly

14. Take-up Gear, Change Arm, Change Gear, Relay Gear, FL Change Gear and FL Change Lever (Fig. 7-14)

1) Remove the cassette loading mechanism. (See item 1 in the section on cassette loading mechanism removal)
2) Remove the slider block and reel drive idler. (See item 6)
3) Remove the clutch gear assembly. (See item 13)

Take-up Gear

4) Remove the washer and pull out the take-up gear.

Change Arm, Change Gear

5) Remove the take-up gear.
6) Release one (1) tab and remove the spring hooked to the change arm.
7) Release two (2) tabs and remove the change arm.
8) Remove the washer and pull out the change gear.

Relay Gear

9) Release one (1) tab and pull out the relay gear.

FL Change Gear, FL Change Lever

10) Remove the cap, spring and washer and pull out the FL change gear.
11) Release two (2) tabs and remove the FL change lever.

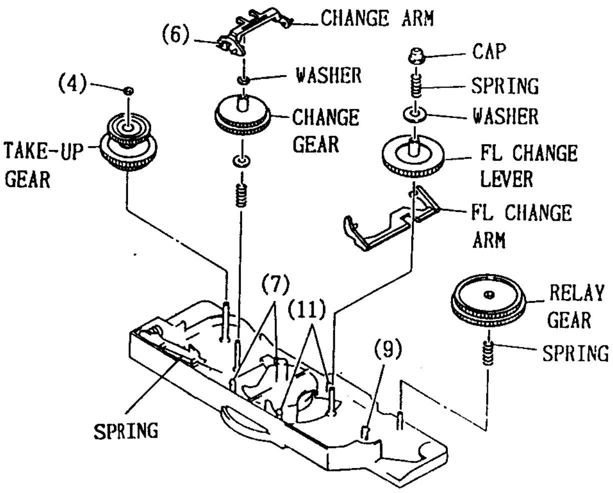

CHANGE ARM
(6)
CAP
(4)
WASHER
SPRING
WASHER
CHANGE GEAR
TAKE-UP GEAR
FL CHANGE LEVER
FL CHANGE ARM
(7)
(11)
RELAY GEAR
(9)
SPRING
SPRING

Fig. 7-14 Take-up Gear, Change Arm, Change Gear, Relay Gear, FL Change Gear and FL Change Lever

8. ATTACHING THE ROTOR MAGNET PLATE TO THE CYLINDER MOTOR

When the rotor magnet plate is removed for repairs or it is replaced, reinstall it correctly observing the following caution item.

[Caution on installation]

* The rotor magnet plate attached to the base of the cylinder motor (illustrated as the top in the figure below) is equipped with magnetic poles. If it is attached in reverse, the VTR will not operate normally. Attach it correctly following the procedure below.

[How to attach]

* There are holes in the rotor magnet plate and cylinder plate attaching bracket. Attach the rotor magnet plate so that hole (A) in the plate and hole (B) in the bracket across from the screw holdes.

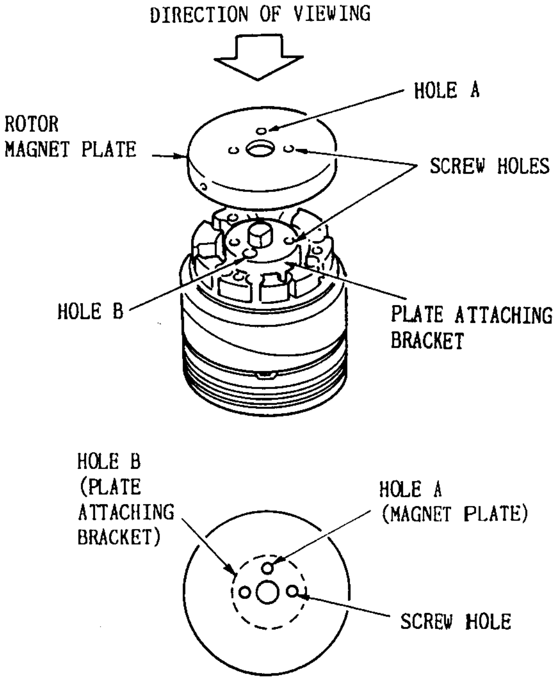

DIRECTION OF VIEWING
HOLE A
ROTOR MAGNET PLATE
SCREW HOLES
HOLE B
PLATE ATTACHING BRACKET
HOLE B (PLATE ATTACHING BRACKET)
HOLE A (MAGNET PLATE)
SCREW HOLE

Fig. 7-15 Rotor Magnet Plate Attachment Position

ELECTRIC CIRCUIT ADJUSTMENT

Test equipment and tapes necessary for adjustment.

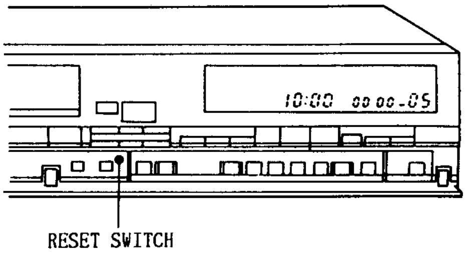
1) Dual-trace oscilloscope
2) Colour bar generator
3) VTVM
4) DC voltmmeter
5) Frequency counter
6) Monitor TV
7) Alignment tape (MH-2)
8) Hi-Fi alignment tape (36HMAFE-3-1)
9) Blank tape (VHS, S-VHS)

Cautions on adjustments

1) If there are no special instructions, the following conditions apply:
   - ◦ Oscilloscope probe: 10:1
   - ◦ Oscilloscope synchronization: Auto-Sync
   - ◦ Tracking control: center click.
   - ◦ Slow tracking control: electrical centre (Press RESET switch S751 to set the slow tracking to the centre electrically)
2) When making more than one adjustment, make adjustments in the order listed.

Resetting microprocessors

The microprocessors used in this unit can be reset by pressing switch (S751) on the timer/operation switch circuit board.


10:00 00 00-05
RESET SWITCH
(S751)

Servicing Positions

Place the unit in the horizontal position as shown in Fig. 1 and adjust the YTJ circuit board.

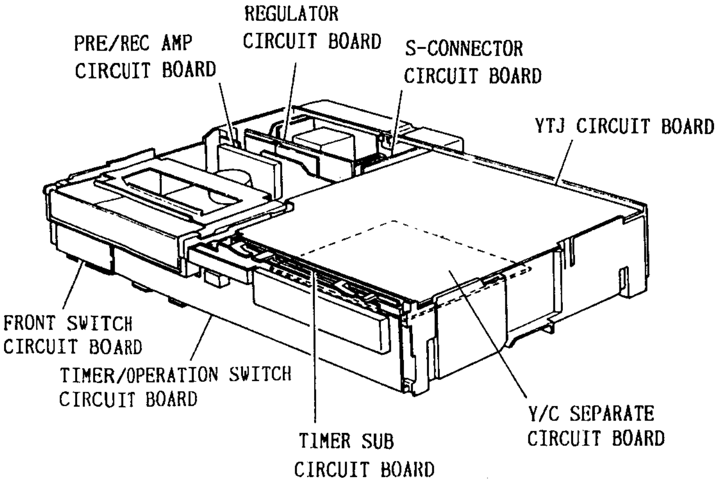

REGULATOR
CIRCUIT BOARD
PRE/REC AMP
CIRCUIT BOARD
S-CONNECTOR
CIRCUIT BOARD
YTJ CIRCUIT BOARD
FRONT SWITCH
CIRCUIT BOARD
TIMER/OPERATION SWITCH
CIRCUIT BOARD
TIMER SUB
CIRCUIT BOARD
Y/C SEPARATE
CIRCUIT BOARD

Fig. 1 Top View

Adjust the SSA circuit board with the left side down as shown in Fig. 2.

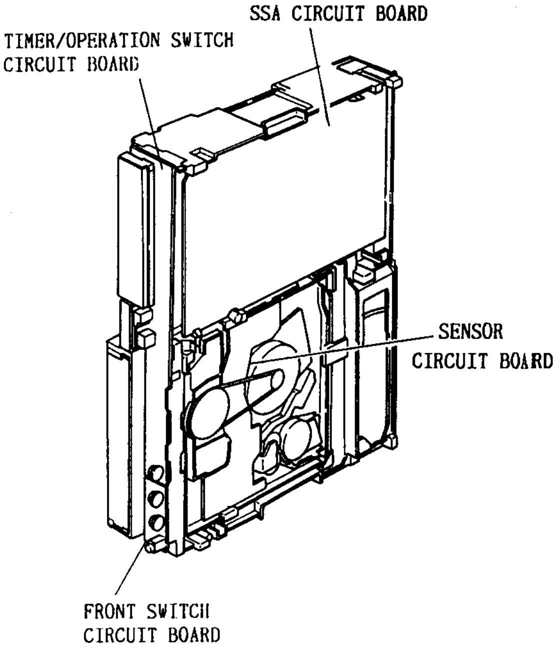

SSA CIRCUIT BOARD
TIMER/OPERATION SWITCH
CIRCUIT BOARD
SENSOR
CIRCUIT BOARD
FRONT SWITCH
CIRCUIT BOARD

Fig. 2 Bottom View

COMPONENT LOCATIONS ON CIRCUIT BOARD

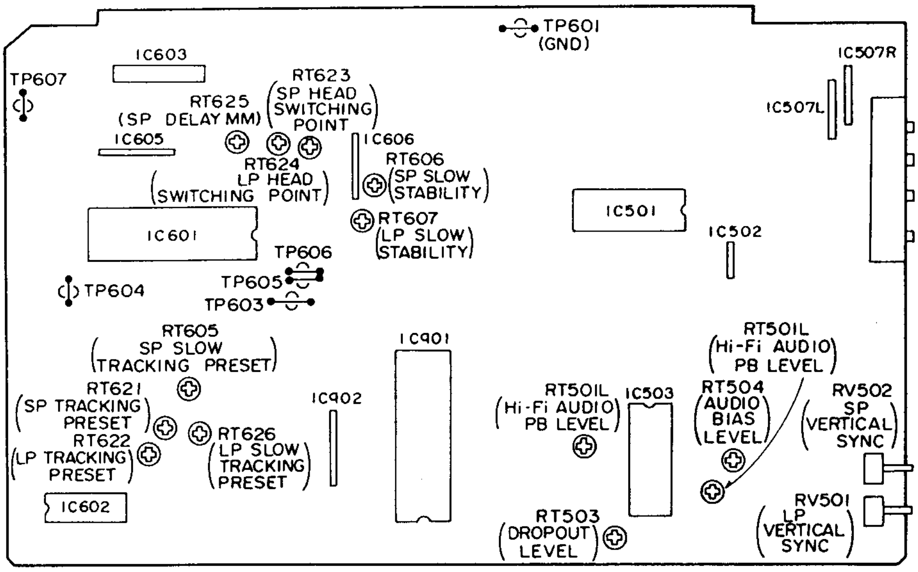

TP601
(GND)
IC603
IC507R
TP607
RT623
(SP HEAD SWITCHING POINT)
RT625
(SP DELAY MM)
IC507L
AUDIO IN R-CH
AUDIO IN L-CH
AUDIO OUT R-CH
AUDIO OUT L-CH
IC605
IC606
RT624
(LP HEAD SWITCHING POINT)
RT606
(SP SLOW STABILITY)
IC501
IC601
RT607
(LP SLOW STABILITY)
IC502
TP606
TP605
TP604
TP603
RT605
(SP SLOW TRACKING PRESET)
IC901
RT501L
(Hi-Fi AUDIO PB LEVEL)
RT621
(SP TRACKING PRESET)
IC902
RT501L
(Hi-Fi AUDIO PB LEVEL)
IC503
RT504
(AUDIO BIAS LEVEL)
RV502
(SP VERTICAL SYNC)
RT622
(LP TRACKING PRESET)
RT626
(LP SLOW TRACKING PRESET)
IC602
RT503
(DROPOUT LEVEL)
RV501
(LP VERTICAL SYNC)

Fig. 3 Components on SSA Circuit Board
(Solder Side)

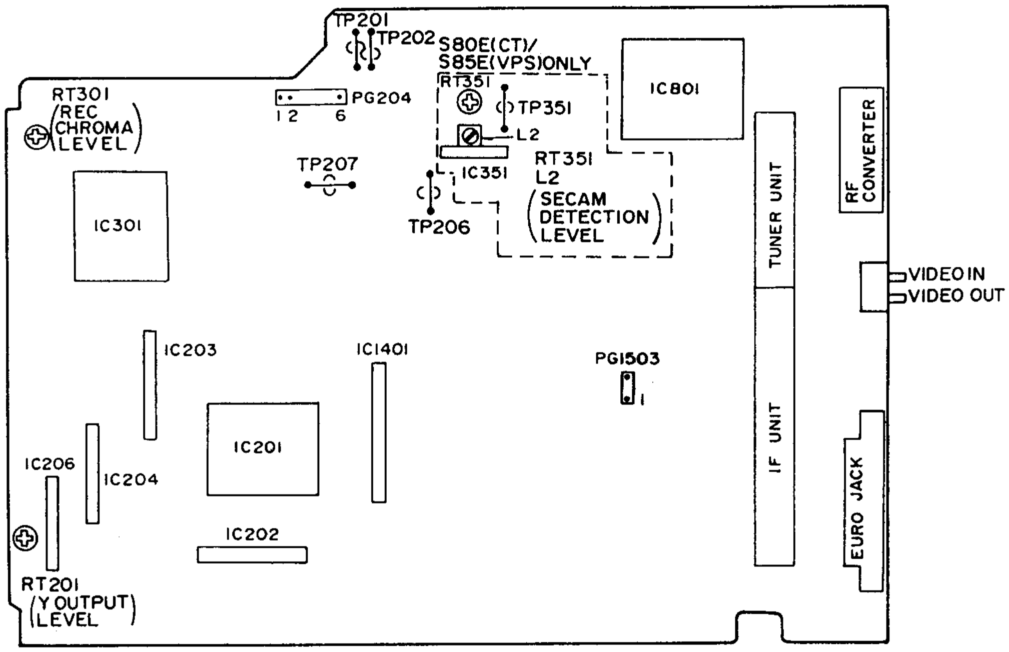

TP201
TP202
S80E(CT)/
S85E(VPS)ONLY
RT301
(REC CHROMA LEVEL)
PG204
1 2 6
RT351
TP351
L2
IC801
RF CONVERTER
TP207
IC351
RT351
L2
(SECAM DETECTION LEVEL)
TUNER UNIT
IC301
TP206
VIDEO IN
VIDEO OUT
IC203
IC1401
PG1503
1
IF UNIT
IC201
IC206
IC204
EURO JACK
IC202
RT201
(Y OUTPUT LEVEL)

Fig. 4 Components on YTJ Circuit Board
(Solder Side)

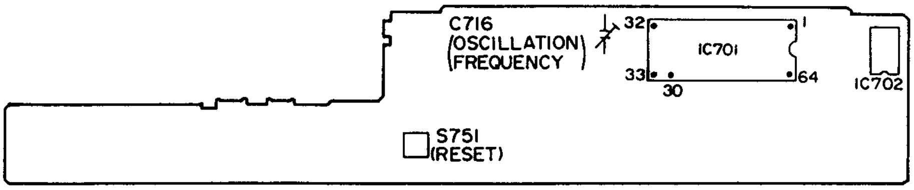

C716
(OSCILLATION FREQUENCY)
32
1
IC701
33
30
64
IC702
S751
(RESET)

Fig. 5 Timer/Operation Switch Circuit Board (Components Side)
〔For S80E(CT)/S85E(VPS)〕

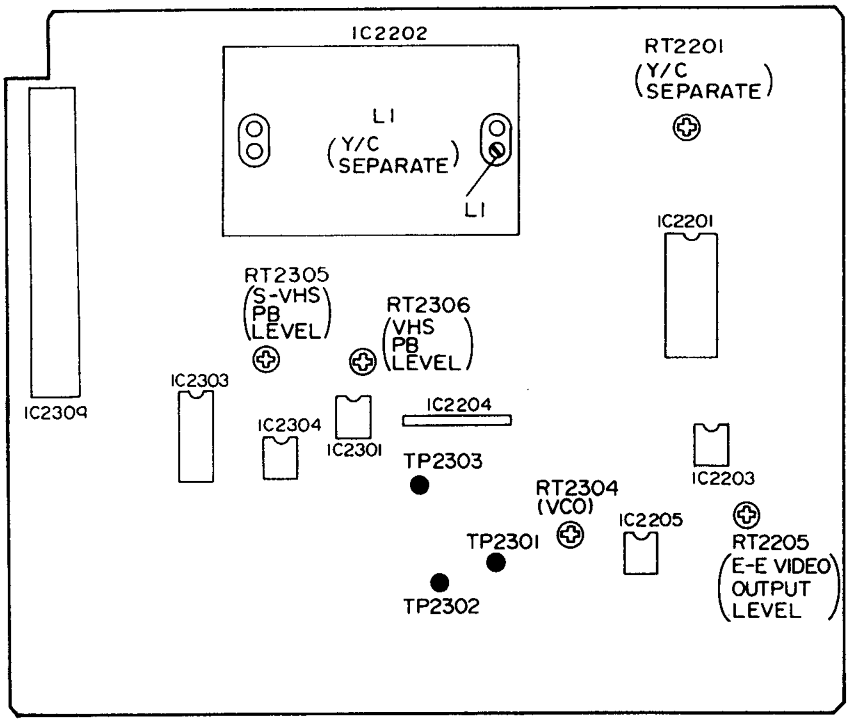

IC2202
RT2201
(Y/C SEPARATE)
L1
(Y/C SEPARATE)
L1
IC2201
RT2305
(S-VHS PB LEVEL)
RT2306
(VHS PB LEVEL)
IC2303
IC2309
IC2204
IC2304
IC2301
TP2303
IC2203
RT2304
(VCO)
IC2205
TP2301
RT2205
(E-E VIDEO OUTPUT LEVEL)
TP2302

Fig. 6 Components on Y/C Separation Circuit Board
(Components Side)

1. SERVO CIRCUIT ADJUSTMENTS

1. SP Delay MM Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To optimize the compatibility of X value.

Fault: ◦ Compatibility cannot be obtained.
◦ Noise appears in the picture.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• Oscilloscope	• CH-1: TP606 (CTL DELAY MM) • CH-2: TP605(TRACKING MM)	• Tracking control: Centre • Playback alignment tape (Stairsteps)	• RT625
• Alignment tape (MH-2) (Parts No. 7099052)			

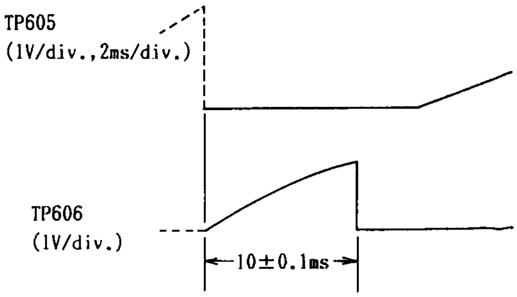
Adjustment Procedure

〔Settings of oscilloscope〕

- Trigger with CH-2
- Set sync slope to "−"

1) Peak of CTL Delay MM: 10±0.1msec. from the trailing edge (trigger point) of tracking MM.

Waveforms


TP605
(1V/div.,2ms/div.)
TP606
(1V/div.)
10±0.1ms

2. Head Switching Point Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: Set the video head switching point to almost the centre where the CH-1 and CH-2 envelopes overlap each other during playback.

Fault:
- ◦ The vertical sync signal is degraded and vertical jitter occurs.
- ◦ Switching noise occurs in lower part of picture.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Points
• Oscilloscope	• CH-1: VIDEO OUT jack • CH-2: TP603 (SW25Hz)	• Tracking control: Centre • Playback alignment tape (Staisteps)	• RT623 (SP) • RT624 (LP)
• Alignment tape (MH-2) (Parts No. 7099052)			

Adjustment Procedure

[Settings of oscilloscope]
- Trigger with CH-2
- Set sync slope to "−"

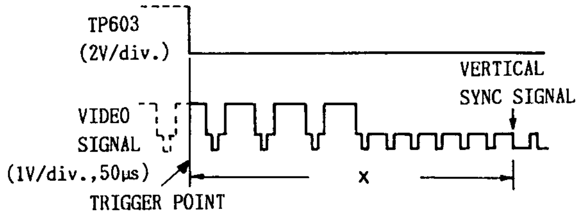
SP Head Switching Point (RT623)

1) Vertical sync signal: 6.5H±0.5H from trailing edge (trigger point) of SW25Hz pulse.

LP Head Switching Point (RT624)

2) Connect a jumper between TP206 and TP207 on the YTJ circuit board.
3) Vertical sync signal: 4.5H±0.5H from trailing edge (trigger point) of SW25Hz pulse.
4) Remove the jumper.

Waveforms



X : SP mode 6.5H±0.5H
X : LP mode 4.5H±0.5H

3. Tracking Preset Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: Optimize tracking when playing back a tape recorded by this unit.

Fault:
- ◦ Noise occurs even with tracking control centred.
- ◦ Noise cannot be removed by turning the tracking control.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Points
• Oscilloscope	• CH-1: TP605(TRACKING MM) • CH-2: TP603(SW25Hz)	• Tracking control: Centre • Record colour bar signal and play it back with this unit	• RT621 (SP) • RT622 (LP)
• Colour bar generator	• VIDEO IN jack(US pin)		
• Blank tape			

Adjustment Procedure

[Settings of oscilloscope]
- Trigger with CH-2
- Set sync slope to "−"

LP Tracking Preset (RT622)

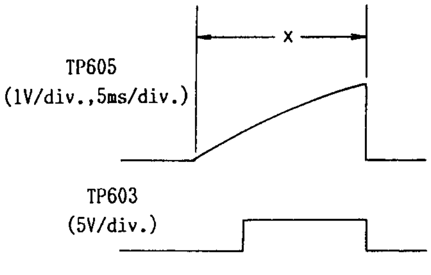
1) Tape speed select switch: LP
2) Record colour bar signal and play it back with this unit.
3) Width of tracking MM pulse: 28±0.5msec.

SP Tracking Preset (RT621)

4) Tape speed select switch: SP
5) Record colour bar signal and play it back with this unit.
6) Width of tracking MM pulse: 26±0.5msec.

Waveforms

X : LP mode 28±0.5ms
X : SP mode 26±0.5ms



4. Slow Tracking Preset Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To adjust the timing to generate a brake pulse for the capstan motor during slow play and minimize noise.

Fault: Noise appears in the slow motion picture which is difficult to see.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Points
• Monitor TV	• VIDEO OUT jack or RF OUT	• Record colour bar signal and play it back in slow mode. • Slow Tracking Control: Electrical Centre	• RT605 (SP) • RT626 (LP)
• Colour bar generator	• VIDEO IN jack(US pin)		

Adjustment Procedure

SP Slow Tracking Preset (RT605)

1) Tape speed select switch: SP
2) Record colour bar signal and play it back with this unit.
3) Move noise to the bottom of the monitor TV.

LP Slow Tracking Preset (RT626)

4) Tape speed select switch: LP
5) Record colour bar signal and play it back with this unit.
6) Move noise to the bottom of the monitor TV.

5. Slow Stability Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: Suppress the horizontal jitter in the picture during slow play.

Fault: Horizontal jitter occurs in the picture during slow play.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Points
• Monitor TV	• VIDEO OUT jack or RF OUT	• Record colour bar signal and play it back in slow mode. • Slow Tracking Control: Electrical Centre	• RT606 (SP) • RT607 (LP)
• Colour bar generator	• VIDEO IN jack(US pin)		

Adjustment Procedure

SP Slow Stability (RT606)

1) Tape speed select switch: SP
2) Record colour bar signal and play it back with this unit in slow mode.
3) Suppress vertical jitter in monitor TV.

LP slow Stability (RT607)

4) Tape speed select switch: LP
5) Record colour bar signal and play it back with this unit in slow mode.
6) Suppress vertical jitter in monitor TV.

6. Vertical Sync. Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: Change timing for adding vertical drive pulse and suppress vertical jitter in picture during still mode.

Fault: Vertical jitter occurs in the during still mode.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Points
• Monitor TV	• VIDEO OUT jack or RF OUT	• Record colour bar signal and play it back with this unit in STILL mode.	• RV502 (SP) • RV501 (LP)
• Colour bar generator	• VIDEO IN jack		

Adjustment Procedure

SP Vertical Sync. (RV502)

1) Tape speed switch: SP
2) Record coulour bar signal and play it back with this unit in STILL mode.
3) Suppress vertical jitter in monitor TV.

LP Vertical Sync. (RV501)

4) Tape speed select switch: LP
5) Record colour bar signal and play it back with this unit in STILL mode.
6) Suppress vertical jitter in monitor TV.

2. Y/CHROMA CIRCUIT ADJUSTMENTS

1. E-E Y Output Level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To set the luminance signal output to the specified level.

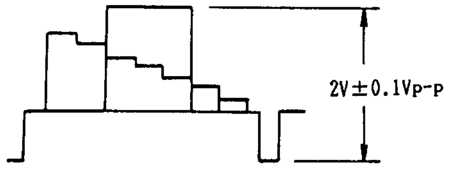
Fault: The correct brightness cannot be obtained.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• Colour bar generator	• VIDEO IN jack (US pin)	• Receive colour bar signal (LINE IN)	• RT201
• Oscilloscope	• PG1503-1	• E-E mode	

Adjustment Procedure

RT201: Set the E-E Y output level to the 2Vp-p. (75 ohms terminated)

Waveform



PG1503-1
(0.2Vdiv., 20μs/div.)

2. Chroma Record Level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: Set the chroma record level to an optimum value.

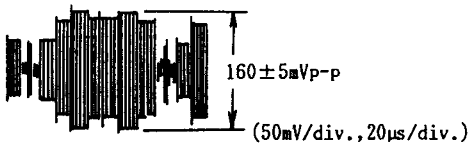
Fault: Diamond beats occur in the played back picture or colouring becomes poor.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• Colour bar generator	• VIDEO IN jack(US pin)	• Receive colour bar signal (LINE IN)	• RT301
• Oscilloscope	• PG204-2	• Record mode	

Adjustment Procedure

RT301: Set the chroma level to 160±5mVp-p.

Waveform



3. SECAM Detection Level Adjustment (SECAM) 〔For S80E(CT)/S85E(VPS)〕

Purpose of adjustment and fault occurring if incomplete

Purpose: Fine tune the SECAM killer level.

Fault: During automatic discrimination PAL and SECAM are discriminated incorrctly.

Test Equipment/Jigs	Test Equipment Connection Point	VTR State	Adjustment Point
• SECAM colour bar generator (Full colour bar)	• VIDEO IN jack(US pin)	• Record mode	• RT351 • L2(included in IC351)
• Oscilloscope	• CH-1: TP351 • CH-2: TP603 (SW25Hz)		
• Blank tape			

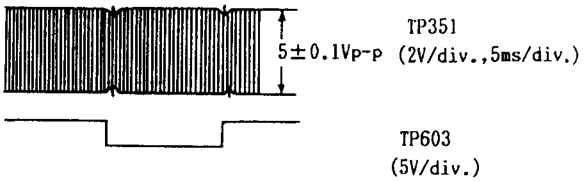
Adjustment Procedure

〔Settings of oscilloscope〕

- Trigger with CH-2

1) RT351: Set the SECAM Detection level to 5±0.1 Vp-p.
2) When the SECAM detection level is higher than 5V, adjust L2 (in IC351) so the level becomes 5±0.1Vp-p.

Waveforms



3. Y/C SEPARATE CIRCUIT ADJUSTMENTS

1. E-E Video Output Level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To set the video output level in the EE mode to a specified value.

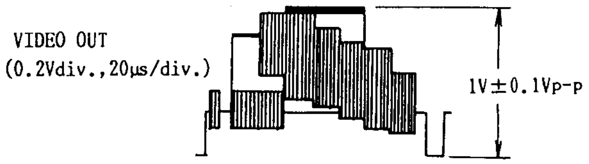
Fault: The correct tint and brightness cannot be obtained.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• Colour bar generator	• VIDEO IN jack(US pin)	• Receive colour bar signal (LINE IN) • E-E mode	• RT2205
• Oscilloscope	• VIDEO OUT jack(US pin)		

Adjustment Procedure

RT2205: Set the E-E video output level to 1±0.1Vp-p. (75 ohms terminated)

Waveform



2. S-VHS Playback Level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To set the video output level in the S-VHS mode to a specified value.

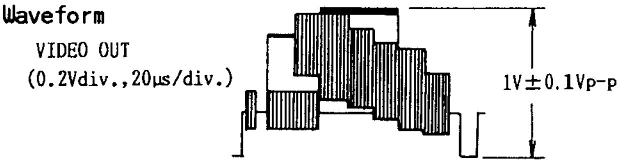
Fault: The correct tint and brightness cannot be obtained.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• Colour bar generator	• VIDEO IN jack(US pin)	• Receive colour bar signal and play it back with this unit • Tracking Control: Centre • S-VHS mode	• RT2305
• Oscilloscope	• VIDEO OUT jack(US pin)		
• Blank tape (S-VHS)			

Adjustment Procedure

RT2305: Set the S-VHS playback level to the 1±0.1Vp-p. (75 ohms terminated)

Waveform



3. VHS Playback Level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To set the video output level in the VHS mode to a specified value.

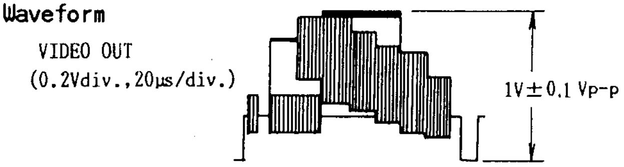
Fault: The correct tint and brightness cannot be obtained.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• Colour bar generator	• VIDEO IN jack(US pin)	• Record colour bar signal and play it back with this unit • Tracking Control: Centre • VHS mode	• RT2306
• Oscilloscope	• VIDEO OUT jack(US pin)		
• Black tape			

Adjustment Procedure

RT2306: Set the VHS playback level to 1±0.1Vp-p. (75 ohms terminated)

Waveform



4. VCO

Purpose of adjustment and fault occurring if incomplete

Purpose: Set the reference clock frequency of the skew detector circuit.

Fault: Skew occurs in the picture during LP trick play.

Test Equipment/Jigs	Test Equipment Connection Point	VTR State	Adjustment Point
• Frequency counter	• TP2303	• E-E mode (Non-signal)	• RT2304

Adjustment Procedure

1) Connect a jumper between TP2301 and TP2302.
2) RT2304: Set the frequency counter reads $30.5^{+0.4}_{-0.1}$ kHz.

5. Y/C Separation Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To separate the luminance (Y) signal from the video signal correctly.

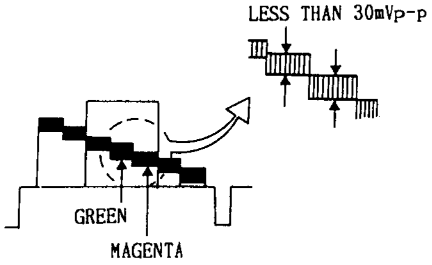
Fault:
- ◦ Colours smear.
- ◦ Moire pattern occurs.

Test Equipment/Jigs	Test Equipment Connection Point	VTR State	Adjustment Points
• Colour bar generator • Oscilloscope	• VIDEO IN jack(US pin) • S-connector (Y output)	• Receive colour bar signal (LINE IN)	• RT2201 • L1 (included in IC2202)

Adjustment Procedure

1) L1: Minimize chroma signals on the green and magenta sections.
2) RT2201: Suppress chroma signals on the green and magenta sections to less than 30mVp-p. (terminated with 75 ohms)

Waveform



4. AUDIO CIRCUIT ADJUSTMENTS

1. Hi-Fi Audio Playback level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To set the Hi-Fi audio playback level to the specified value.

Fault: The proper sound volume cannot be obtained.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Points
• VTVM • Hi-Fi alignment tape (36HMAFE-3-1) (Parts No. 7099175)	• AUDIO OUT jack(US pin) (L-CH or R-CH)	• Playback Hi-Fi alignment tape • AUDIO switch: AUTO position	• RT501L(L-CH) • RT501R(R-CH)

Adjustment Procedure

L-CH Hi-Fi Audio PB Level (RT501L)

1) Connect a VTVM to the L-CH AUDIO OUT jack.
2) RT501L: The VTVM reads -4.8±0.1dBs.

R-CH Hi-Fi Audio PB Level (RT501R)

3) Connect a VTVM to the R-CH AUDIO OUT jack.
4) RT501R: The VTVM reads -4.8±0.1dBs.
5) Perform the dropout level adjustment after this adjustment is completed.

2. Dropout Level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To set the dropout detection level and muting level of FM audio signal.

Fault: ◦ Noise occurs even with a minute dropout of envelope.
◦ Hi-Fi audio is not switched to linear audio when an envelope is missed.

Test Equipment/Jigs	Test Equipment Connection Point	VTR State	Adjustment Point
• DC voltmeter • Alignment tape (MH-2) (Parts No. 7099052)	• TP501	• Playback alignment tape • AUDIO Switch: AUTO position	• RT503

Adjustment Procedure

1) Connect a jumper between TP505 and TP504(GND).
2) Connect a jumper between TP506 abd TP504(GND).
3) The DC voltmeter reads 2.5±0.1V DC.
4) Remove the jumpers.

3. Audio Bias level Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: To set audio bias during recording to optimum level.

Fault: ◦ Bias too high: High-frequency response deteriorates.
◦ Bias too low: Sound tends to be distorted.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• VTVM	• TP502 (BIAS) • TP503 (BIAS GND)	• Non-signal recording	• RT504

Adjustment Procedure

1) RT504: The VTVM reads 2.3±0.1mV.

5. TIMER CIRCUIT ADJUSTMENT [For S80E(CT)/S85E(VPS)]

1. Oscillation Frequency Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: Suppress the time gain or lag of the timer less than 0.2 seconds per day.

Fault: The clock will malfunction.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
• Frequency counter	• IC701-30 • IC701-32 (GND)	• Stop mode	• C716

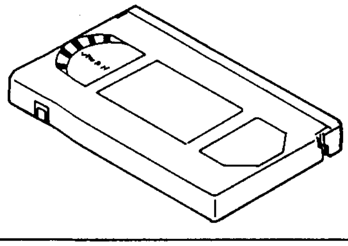
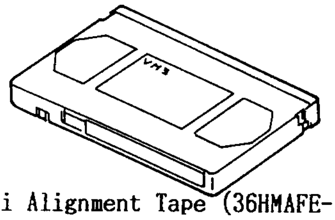
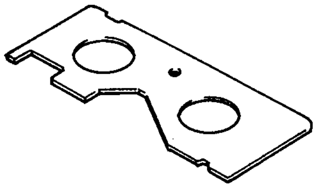
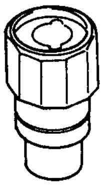
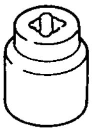
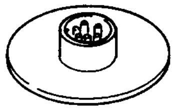
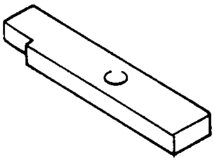
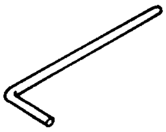
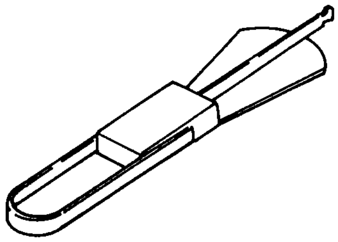
Adjustment Procedure

C716: The frequency counter reads 32768±2Hz.

Note: Be careful when applying an adjustment driver to C716 because the stray capacitance of the driver may vary the frequecny.

MECHANISM ADJUSTMENT

JIGS AND TAPES FOR ADJUSTMENT

1. Back Tension Meter Parts No.7099004 	2. Alignment Tape (MH-2) Parts No. 7099052  Hi-Fi Alignment Tape (36HMAFE-3-1) Parts No. 7099175	3. Master Plane Parts No.7099279 
4. Torque Gauge Parts No.7099039 	5. Torque Gauge Adaptor Parts No.7099035 	6. Dummy Reel Parts No.7099043 
7. Reel Disk Height Jig Parts No.7099038 	8. 1.5mm Hexagonal Wrench 0.9mm Hexagonal Wrench 	9. Fan-type Tension Gauge 

MECHANICAL PARTS ADJUSTMENT

1. Mechanism State Switch

Purpose: To detect the mechanism state correctly and prevent malfunctions.

Test equipment/jigs	Preparation for adjustment	State of VTR	Adjustment points
• Blank tape	———	• Eject mode (with the cassette ejected)	• Mechanism state switch • Mode gear

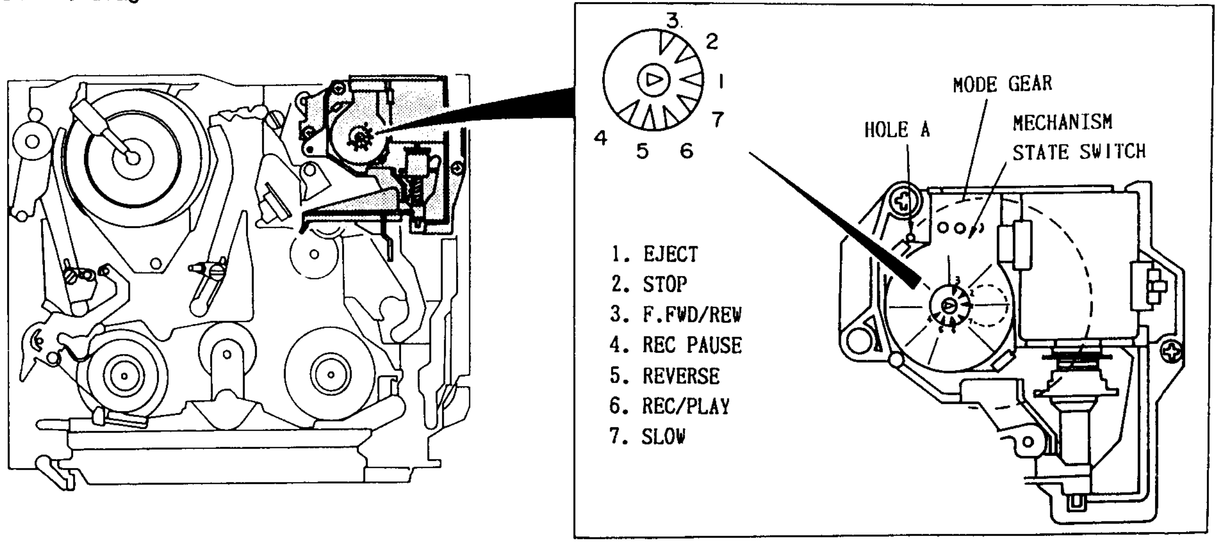
Adjustment procedure

1) Check that the arrow on the centre shaft of the mechanism state switch points to the arrow of mechanism mode indication number 1. Also check that hole (A) beside the mechanism state switch and the hole in the mode gear are aligned.

2) If the above alignments are not obtained, adjust as follows.
   1. Remove the mechanism state switch/loading motor assembly.
      (See "MAIN MECHANICAL COMPONENTS REMOVAL" in CHAPTER 2.)
   2. Move the mode gear to align the position of hole (A).
   3. Turn the gear on the back of the mechanism state switch so that the arrow on the centre shaft of the switch points to the arrow of mechanism mode indication number 1.
   4. Reinstall the mechanism state switch/loading motor assembly in the above condition.

3) Load a blank tape and perform various operations to check that loading and unloading are performed correctly.

Adjustment diagram


3
2
1
7
4
5 6
MODE GEAR
HOLE A
MECHANISM
STATE SWITCH
1. EJECT
2. STOP
3. F.FWD/REW
4. REC PAUSE
5. REVERSE
6. REC/PLAY
7. SLOW

TAPE TRANSPORT SYSTEM PARTS ADJUSTMENT

The tape transport system is the path from the supply reel disk passing through the video heads to the take-up reel disk. The transport system parts, especially the parts which directly come into contact with a tape, should be kept clean without scratches, dust, oil, etc.

The tape transport system has been adjusted before the unit is shipped from the factory. Therefore, when parts in the transport system are replaced, the transport system is stabilized by only adjusting the new parts correctly.

1. Reel Disk Height Adjustment

Purpose: To set the reels of the cassette to the specified height, thus determining the height of tape.

Test equipment/jigs	Preparation for adjustment	State of VTR	Adjustment points
• Master plane (Parts No.7099279) • Reel disk height jig (Parts No.7099038)	1) Remove the cassette loading mechanism. 2) Mount the master plane and place the reel disk height jig on it.	——	• Spacers in the supply and take-up reel disks

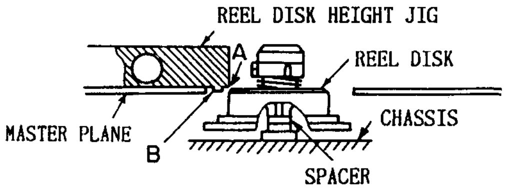
Adjustment procedure

1) Check that the reel disk is between sections A and B of the reel disk height jig.
2) If the disk is not between sections A and B of the jig, replace the spacer (0.5mm thick) in the reel disk or adjust them.

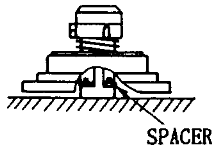
〔Caution〕

When the tension arm and tension band are removed, adjust the tension pole position and tension after reinstalling them.

Adjustment diagram


REEL DISK HEIGHT JIG
A
REEL DISK
CHASSIS
MASTER PLANE
B
SPACER

SUPPLY REEL DISK



TAKE-UP REEL DISK

2. Tension Pole Position and Tension Adjustment

Purpose: To make the tension of tape constant so that the contact between the video heads and tape is stabilized.

Test equipment/jigs	Preparation for adjustment	State of VTR	Adjustment points
Position adjustment ——	——	1) Remove the top cover. 2) Set the VTR to the loading state without inserting a cassette. (See page 4-10)	Position adjustment: Tension band holder
Tension adjustment • Back Tension Meter (Parts No.7099004)	——	Tension adjustment 3) Play the tension cassette.	Tension adjustment: Tension spring hooking position

Adjustment procedure

- Position Adjustment -

1) Loosen the tension band retaining screw.
2) Insert the tension band holder into one of grooves 1 to 3 and set the gap between the tension pole and chassis to -0.5 to 2mm.
3) Tighten the tension band retaining screw.
4) After adjustment is completed, perform loading without inserting a cassette and recheck the tension pole position.

- Tension Adjustment -

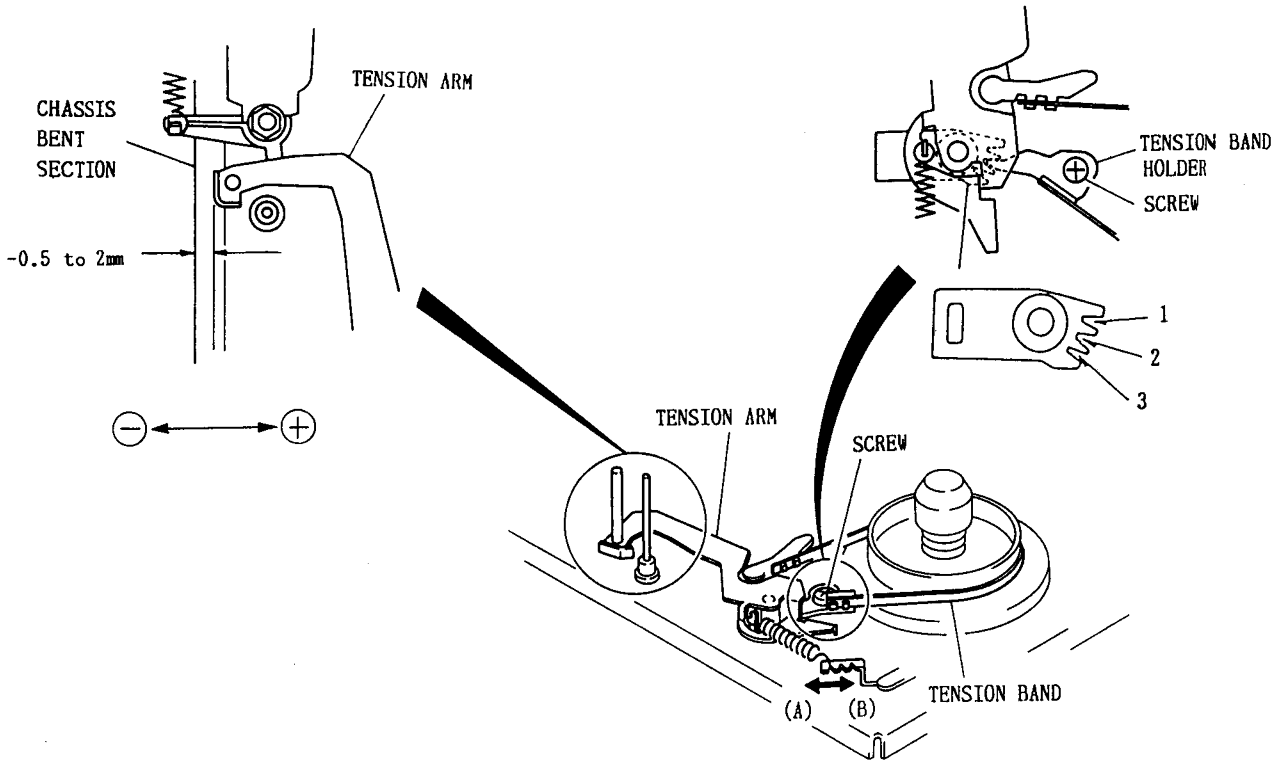
Reading of Back Tension Meter: 34 to 44 g-cm (reference value)

If the reading is higher than the reference, move the spring in direction (A)

If the reading is lower than the reference, move the spring in direction (B).

Caution: When the tension position was changed greatly (more than 6 g-cm), recheck the tension pole position. If it is drifted, readjust the tension pole position and tension.

Adjustment diagram



3. Guide Pole Height Adjustment

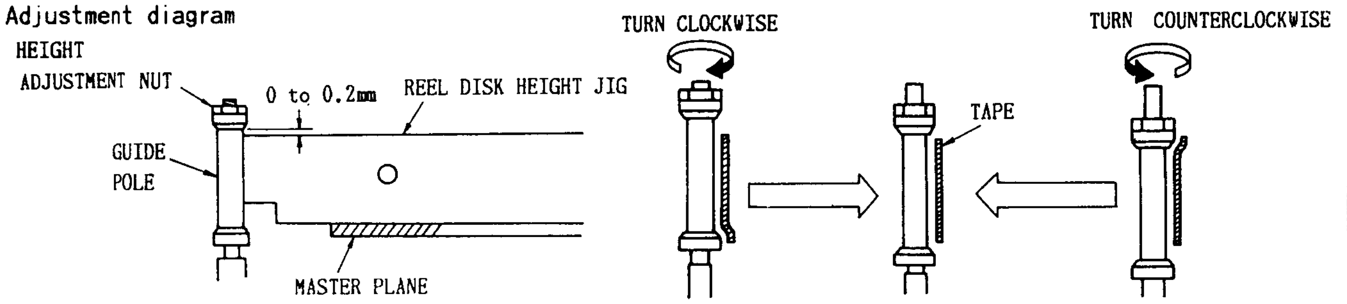
Purpose: To regulate the tape height.

Test equipment/jigs	Preparation for adjustment	State of VTR	Adjustment points
• Master plane (Parts No.7099279) • Reel disk height jig (Parts No.7099038)	1) Remove the cassette loading mechanism. 2) Mount the master plane and place the reel disk height jig on it.	——	• Nuts on the supply and take-up guide poles
• Blank tape	——	• Playback mode	

Adjustment procedure

1) Set the clearance between the bottom of the guide pole's upper flange and top of the reel disk height jig is 0 to 0.2mm.
2) Load a blank tape to run it and check that the tape does not ride over the upper and lower flanges of the guide pole.
3) If the tape rides over either flange, adjust the height of guide pole as follows.
   If the tape rides over the upper flange, turn the nut counterclockwise.
   If the tape rides over the lower flange, turn the nut clockwise.

Adjustment diagram


HEIGHT ADJUSTMENT NUT
0 to 0.2mm
REEL DISK HEIGHT JIG
GUIDE POLE
MASTER PLANE
TURN CLOCKWISE
TAPE
TURN COUNTERCLOCKWISE

4. Guide Roller Height Adjustment

Purpose: To regulate the height of tape so that the bottom of tape runs along the tape guide line on the cylinder.

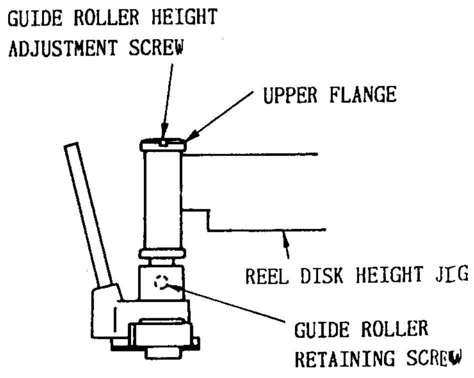
Coarse Adjustment

Test equipment/jigs	Preparation for adjustment	State of VTR	Adjustment points
• Master plane (Parts No.7099279) • Reel disk height jig (Parts No.7099038) • 0.9mm Hexagonal wrench	1) Remove the cassette loading mechanism. 2) Mount the master plane and place the reel disk height jig on it.	——	Height adjustment screws on the supply and take-up guide rollers

Adjustment procedure

1) Loosen the guide roller retaining screw (so that the guide roller does not turn during loading, unloading and play).
2) Align the bottom of the guide roller's upper flange and the top of the reel disk height jig.
3) Perform the precise adjustment continuously.

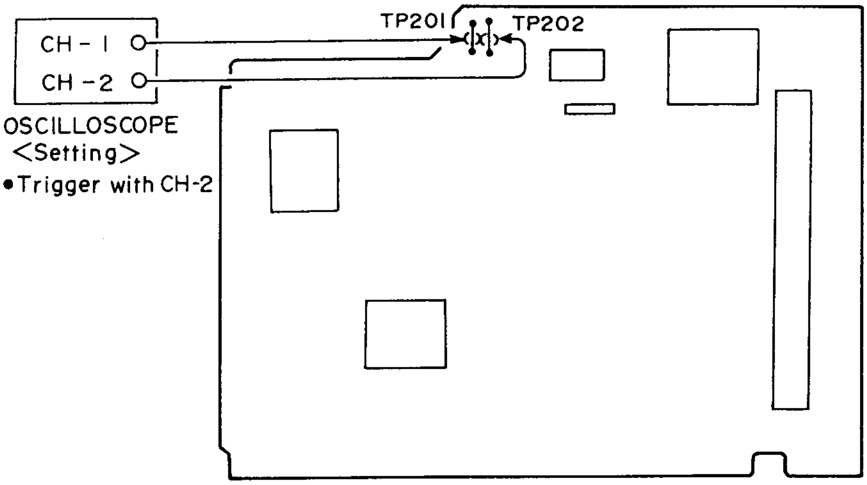
Adjustment diagram


GUIDE ROLLER HEIGHT ADJUSTMENT SCREW
UPPER FLANGE
REEL DISK HEIGHT JIG
GUIDE ROLLER RETAINING SCREW

Precise Adjustment

Test equipment/jigs	Test equipment connection points	State of VTR	Adjustment points
• Oscilloscope	• CH-1: TP201 (PB FM) • CH-2: TP202 (SW 25Hz)	• Play alignment tape. (Colour bars)	• Guide roller height adjustment screws
• Alignment tape (MII-2) (Parts No.7099052) • 0.9mm Hexagonal wrench	——		

Connection diagram

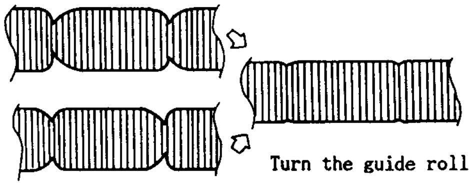


YTJ Circuit Board (Components Side)

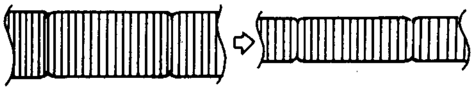
Adjustment procedure

1) Tracking control : Centre position (when this adjustment is performed after the cylinder has been replaced, set the tracking control so that the FM output is maximum.)
2) Height adjustment screw: Flatten the FM envelope.
3) Turn the tracking control clockwise and counterclockwise (to the right and left).
4) Check that the FM drops at the start and end of FM envelope are uniform.
5) Tighten the guide roller retaining screw.

Waveforms



Turn the guide roller height adjustment screw slightly to flatten the FM envelope.



Tracking control at centre

Turn the tracking control to both directions.

5. Audio / Control (A/C) Head Adjustment

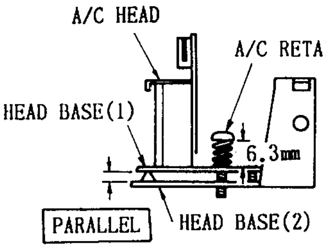
Purpose: To keep the contact between the tape and head even so the specified track is recorded and played back.

Coarse Adjustment

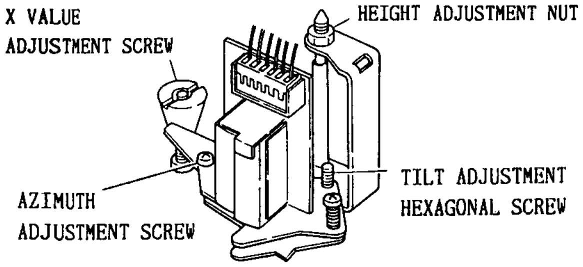
Test equipment/jigs	Preparation for adjustment	State of VTR	Adjustment points
• Master plane (Parts No.7099279) • Reel disk height jig (Parts No.7099038) • 1.5mm Hexagonal wrench	1) Remove the cassette loading mechanism. 2) Mount the master plane and place the reel disk height jig on it.	——	• A/C head retaining screw • Azimuth adjustment screw • Height adjustment nut • Tilt adjustment screw
• Blank tape	——	• Run the blank tape.	

Adjustment procedure/adjustment diagrams

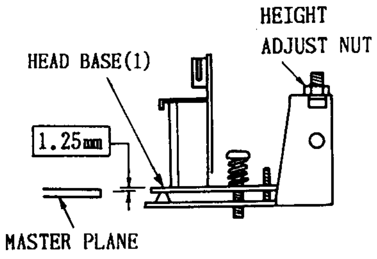
1) A/C head retaining screw: Check that the spring section of the A/C head retaining screw protrudes 6.3mm over the top of head base (1).


A/C HEAD
A/C RETAINING SCREW
HEAD BASE(1)
6.3mm
PARALLEL
HEAD BASE(2)

2) Tilt adjustment hexagonal screw, azimuth adjustment screw: Make head bases (1) and (2) parallel.

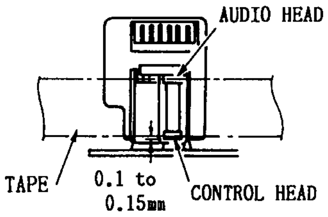

X VALUE
ADJUSTMENT SCREW
HEIGHT ADJUSTMENT NUT
AZIMUTH
ADJUSTMENT SCREW
TILT ADJUSTMENT
HEXAGONAL SCREW

3) Height adjustment nut: Set the clearance between the master plane and head base (1) to approx. 1.25mm


HEIGHT
ADJUST NUT
HEAD BASE(1)
1.25mm
MASTER PLANE

4) Remove the adjustment jigs, load a blank tape and set the VTR to the play mode.

5) Check that there is no conspicuous curling and riding over around the A/C head. If there is conspicuous curling or riding over, readjust the tilt adjustment hexagonal screw, azimuth adjustment screw and height adjustment nut. When the bottom edge of tape is 0.1 to 0.15mm from the bottom edge of the control head's core, the height of A/C head is ideal.


AUDIO HEAD
TAPE
0.1 to
0.15mm
CONTROL HEAD

6) Perform the precise adjustment continuosly.

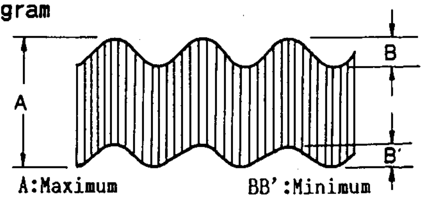
Precise Adjustment

Test equipment/jigs	Test equipment connection point	State of VTR	Adjustment points
• Oscilloscope	• AUDIO OUT jack	• Play alignment tape (Stairsteps)	• Azimuth adjustment screw • Height adjustment nut • Tilt adjustment screw
• Alignment tape (MH-2) (Parts No.7099052) • 1.5mm Hexagonal wrench	——		

Adjustment procedure

1) Adjust the azimuth adjustment screw, height adjustment nut and tilt adjustment hexagonal screw slightly and alternately: Make the audio output maximum and flat (minimum fluctuations).

Waveform diagram


A
B
B'
A:Maximum
BB':Minimum

6. X Value Adjustment

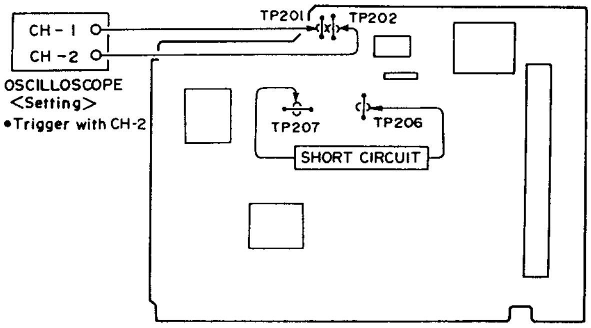
Purpose: To obtain compatibility with other VTRs.

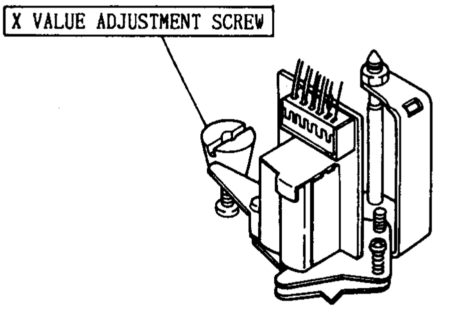
Note: Always perform the tracking preset adjustment (page 3-3) that should be done when the cylinder is replaced before adjusting the X value.

Test equipment/jigs	Test equipment connection points	State of VTR	Adjustment point
• Oscilloscope	• CH-1: TP201 (PB FM) • CH-2: TP202 (SW 25Hz)	• Play alignment tape (Stairsteps)	• X value adjustment screw
• Alignment tape (MH-2) (Parts No.7099052) • 1.5mm Hexagonal wrench	——		

Connection diagram

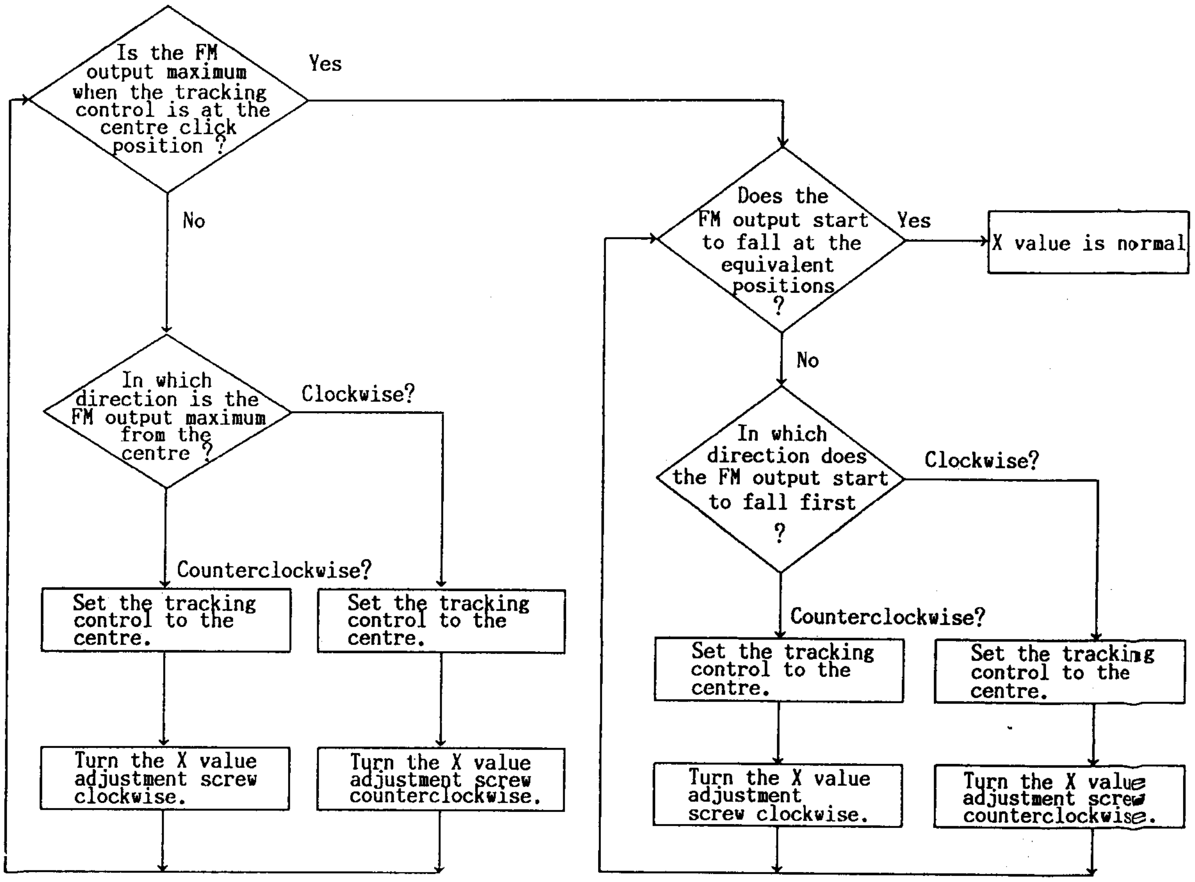
YTJ Circuit Board (Components Side)


TP201
TP202
CH-1
CH-2
OSCILLOSCOPE
<Setting>
•Trigger with CH-2
TP207
TP206
SHORT CIRCUIT

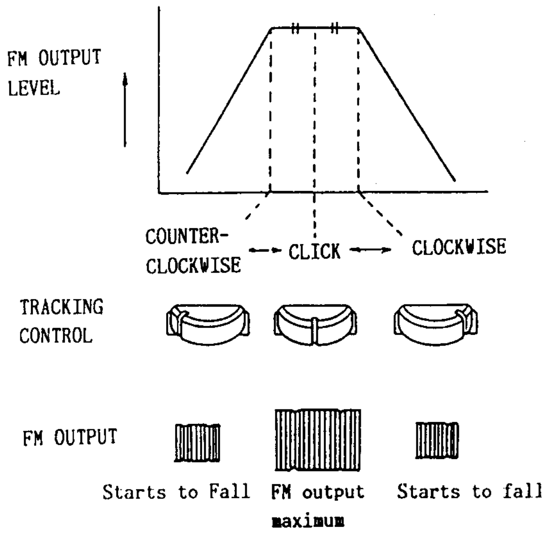

X VALUE ADJUSTMENT SCREW

Adjustment procedure

Adjust so that the FM output is maximum when the tracking control is at the centre click position and it starts to fall at the equivalent angles when the control is turned clockwise/counter-clockwise.


Is the FM output maximum when the tracking control is at the centre click position ?
Yes
No
In which direction is the FM output maximum from the centre ?
Clockwise?
Counterclockwise?
Set the tracking control to the centre.
Set the tracking control to the centre.
Turn the X value adjustment screw clockwise.
Turn the X value adjustment screw counterclockwise.
Does the FM output start to fall at the equivalent positions ?
Yes
X value is normal
No
In which direction does the FM output start to fall first ?
Clockwise?
Counterclockwise?
Set the tracking control to the centre.
Set the tracking control to the centre.
Turn the X value adjustment screw clockwise.
Turn the X value adjustment screw counterclockwise.

Adjustment diagram

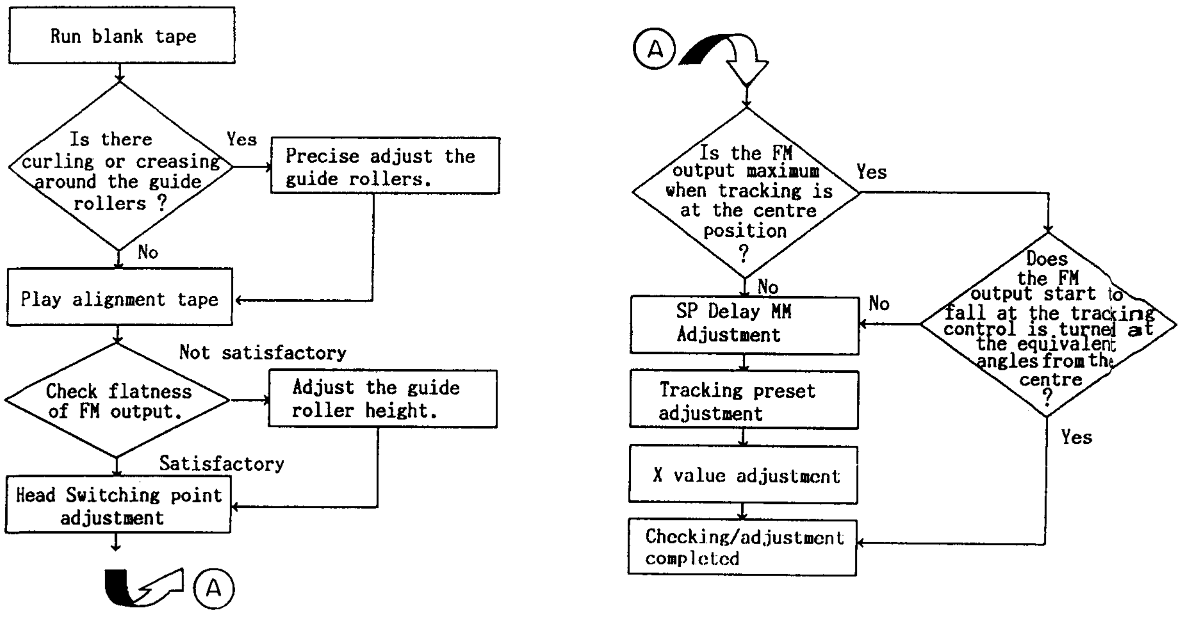

FM OUTPUT LEVEL
COUNTER-CLOCKWISE
CLICK
CLOCKWISE
TRACKING CONTROL
FM OUTPUT
Starts to Fall
FM output maximum
Starts to fall

7. Adjustments After Replacing Cylinder (Video Heads)

Purpose: To suppress drift in the height relative to the guide roller and to minimize the X value after replacing the cylinder.

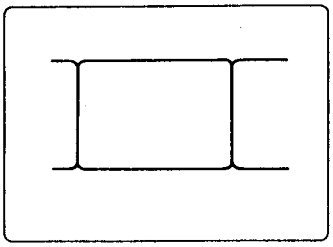
Test equipment/jigs	Test equipment connection points	State of VTR	Adjustment points
• Oscilloscope	Checking the flatness • CH-1: TP201 (PB FM) • CH-2: TP202 (SW 25Hz)	• Run the blank tape	• Guide rollers (precise adjustment on page 4-5) • Head switching point (page 3-4) • Tracking preset (page 3-4) • X value (page 4-7)
• Alignment tape (MH-2) (Parts No.7099052) • Blank tape • 0.9mm/1.5mm Hexagonal wrenches • X value adjustment screwdriver	——	• Play alignment tape (Stairsteps)	

Checking/adjustment procedure

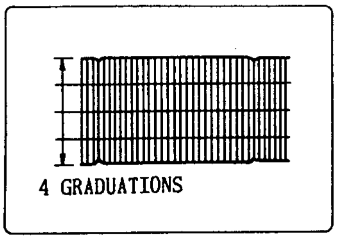

Run blank tape
Is there curling or creasing around the guide rollers ?
Yes
Precise adjust the guide rollers.
No
Play alignment tape
Not satisfactory
Check flatness of FM output.
Adjust the guide roller height.
Satisfactory
Head Switching point adjustment
A
A
Is the FM output maximum when tracking is at the centre position ?
Yes
No
SP Delay MM Adjustment
No
Does the FM output start to fall at the tracking control is turned at the equivalent angles from the centre ?
Yes
Tracking preset adjustment
X value adjustment
Checking/adjustment completed

Checking procedure of the flatness and fluctuations of FM output and waveform diagrams

1) Use the tracking control to maximize the FM output.

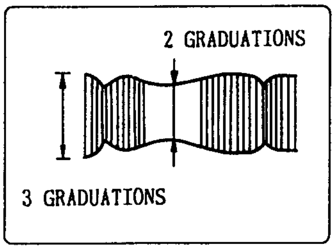


2) Fine tune the voltage level range of the oscilloscope to set the FM output to 4 graduations.



3) Turn the tracking control to set the maximum amplitude of the FM output to 3 graduations.

4) Check that the minimum amplitude is more than 2 graduations.



5) Check that the level fluctuations between the maximum and minimum amplitudes are less than 13%.

8. Tension/Torque Checks

Purpose: It is necessary to check the tension, torque and compression force at the tape take-up section and moving section to make the tape running smooth and satisfy the basic performance of the VTR. Check these if the tape running is not smooth or the tape speed is abnormal.

Test equipment/jigs	State of VTR
• Torque gauge • Torque gauge adaptor	• Set the VTR to each operation mode without inserting a cassette. (See page 4-10)

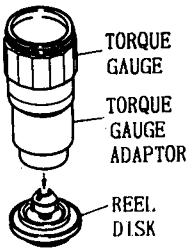
Item	VTR operation mode	Measured reel	Measured value
Main brake torque	Stop (Note)	Supply & take-up reels	170 g·cm or more
Slack removal torque	Unloading	Supply reel	90 ~ 230 g·cm
Fast forward torque	Fast forward	Take-up reel	400 g·cm or more
Rewind torque	Rewind	Supply reel	400 g·cm or more
Take-up torque	Play	Take-up reel	80 ~ 170 g·cm
Back-tension torque	Fast forward	Supply reel	4 ~ 25 g·cm
	Rewind	Take-up reel	

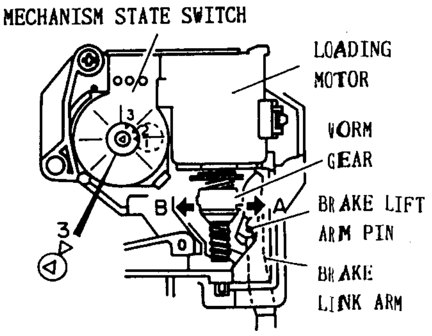
Checking method

The values are measured using a torque gauge and a torque gauge adaptor with the torque gauge fixed.

Note: Turn the worm gear in the direction of arrow (A) in the stop mode and shift the pointer on the mechanism state switch to "3" so as to apply the main brake to the supply reel disk. Then turn the worm gear in the direction of arrow (B) so that brake link arm is released from the brake lift arm pin.(Set the reel drive idler to the centre position.)

Adjustment diagram





9. To Set the VTR to the Loading State without Inserting a Cassette

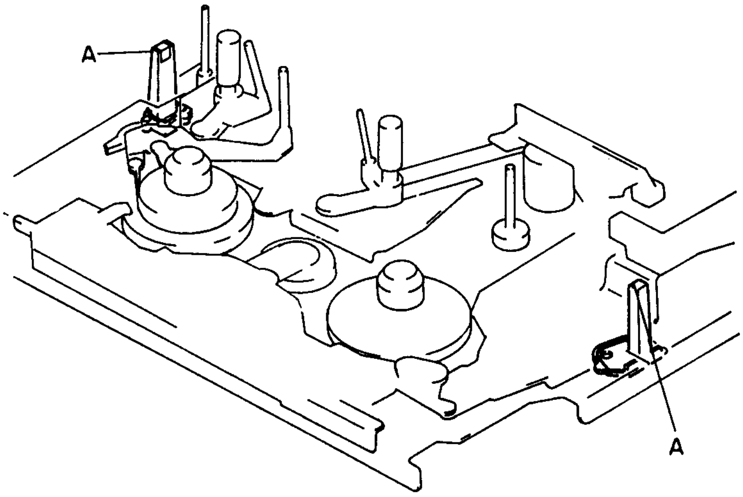
1) Remove the top cover and front panel.
2) Remove the cassette loading mechanism.
3) Unplug the power lead form the AC outlet.
4) Cover the supply and take-up end sensors (sections A in the figure below) with black masking tape, etc. to shut off the light.
5) Plug the power lead into the AC outlet.
6) Turn "ON" the operate switch of the VTR.
   The VTR can accept the inputs of each mode in this state. However, the rewind operation cannot be performed for more than a few seconds because the take-up reel disk is in the stop state and reel pulses cannot be detected.

〔Cautions〕

Always return the VTR to the original state in the following order after the above operations have been performed.

1) Remove the masking tape, etc. from the supply and take-up end sensors.
2) Unplug the power lead from the AC outlet to reset the system control microprocessor.

Adjustment diagram



MAINTENANCE/INSPECTION PROCEDURE

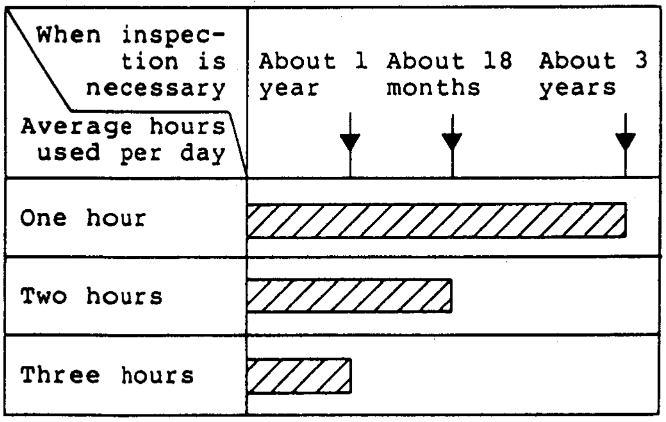
1. Required Maintenance

The recording density of a VTR is much higher than that of an audio tape recorder. VTR components must be very precise, at tolerances of 1/1000 mm, to ensure compatible with other VTRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure a good picture, periodic inspection and maintenance, including replacement of worn-out parts and lubrication, is necessary.

2. Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they are greatly according to the way in which the customer uses the VTR, and the environment in which the VTR is used. But, in general home use, a good picture will be maintained if the inspection and maintenance is done every 1,000 hours. The table below shows the relation between time used and inspection period.

Table 1



3. Check before starting Repairs

The following faults can be remedied by cleaning and oiling. Check the need for lubrication and the conditions of cleanliness in the unit. Check with the customer to find out how often the unit is used. If from that you determine that the unit is ready for inspection and maintenance, check the following parts.

Table 2

Phenomenon	Inspection Location
Poor S/N, no colour	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pressure roller, reel belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Colour beats	Dirt on full-erase head
Low volume or sound distorted	Dirt on audio/control head
Fast forward or rewind is not done or rotation is slow	Dirt on reel belt

4. Tools Needed for Inspection and Maintenance

(1) Head cleaning kit
(2) VTR oil kit
(3) Alcohol (or freon)
(4) Gauze
(5) Screwdriver for adjusting X-value

Table 3 Locations for Greasing and Oiling using the Kit

Name	Oil or Greasing Location
Pan motor oil (X10W40)	Oil high-speed rotating sections
Sonic Slidas Oil (#1600)	Oil low-speed rotating sections
Hitazol (MO138)	Grease metal parts under heavy lead
Froil (GB-TS-1)	Lubricate metal or molded sections under light load
Lock paint	Fix adjustment screws

The above oils and greases are in the kit prepared especially for VTR maintenance. Use this kit for lubrication.

5. Maintenance Procedures

5-1 Cleaning

(1) Cleaning video head

First use a cleaning tape. If dirt on head is too stubborn to remove by tape, use the cleaning kit. Moisten the cleaning stick with cleaning fluid at the point indicated. Touch the stick to the head tip and gently turn the head (rotating cylinder) to the right and left.
(Do not move the stick vertically and make sure that only the chamois leather on the stick comes into contact with the head. Otherwise, the head may be damaged.)
Thoroughly dry the head. Then test run a tape. If cleaning fluid remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Cleaning the tape transport system and drive system, etc.

Wipe with gauze moistened with alcohol or freon.

Notes:

1) The tape transport system is the system which comes into contact with the running tape. The drive system consists of those parts which run the tape.
2) Make sure that during cleaning you do not touch the tape transport system with the tip of a screwdriver and that no force is applied to the system that could deform it.

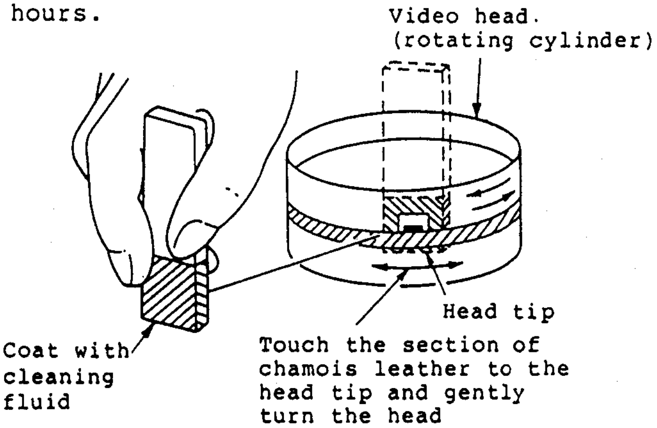
5-2 Lubrication

(1) Guidelines for lubricating with oil

Use the oiler to apply one or two drop of pan motor oil or Sonic Slidas oil. Make sure not to use too much oil because it may spill over or leak out coming into contact with rotating parts and causing slippage or other problems. If too much oil is applied, wipe clean with alcohol or freon.

(2) Periodic oil lubrication

Oil specified locations every 1,000 hours.


Video head.
(rotating cylinder)
Head tip
Coat with cleaning fluid
Touch the section of chamois leather to the head tip and gently turn the head

5-3 Greasing

(1) Greasing guidelines

Apply grease, Hitazol or Froil, with a stick or brush. Do not use excess grease. It may come into contact with the tape transport or drive system. Wipe any excess and clean with gauze moistened with alcohol or freon.

(2) Periodic greasing

Grease specified locations every 5,000 hours.

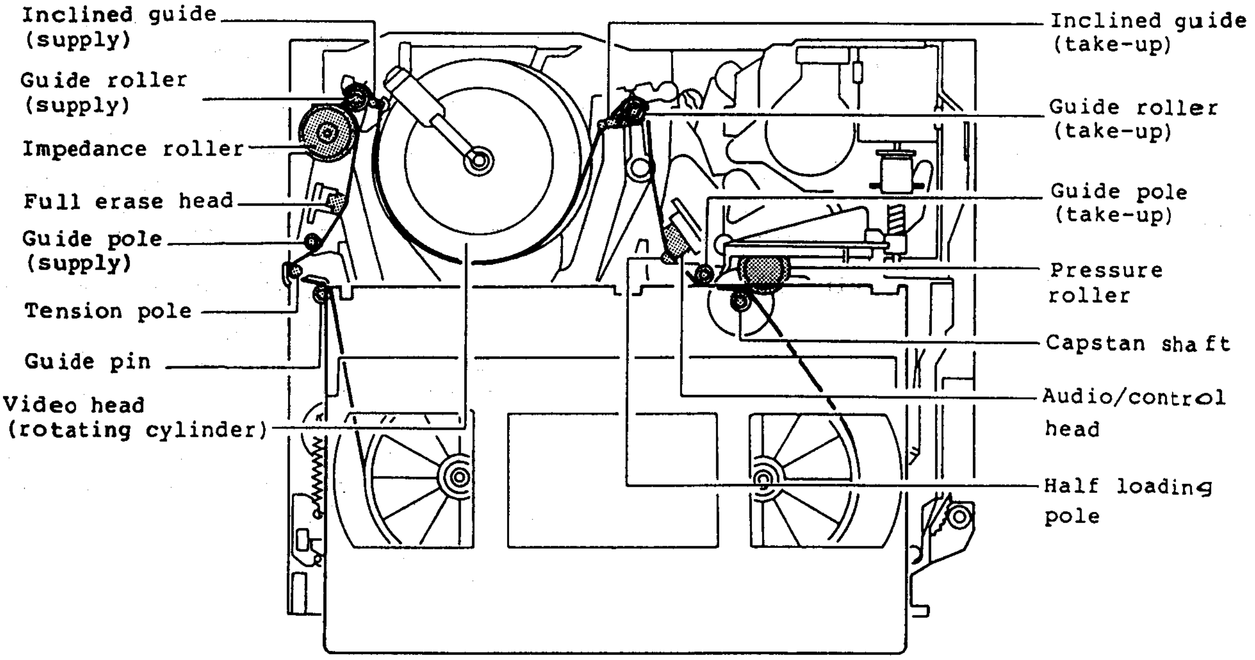

Inclined guide (supply)
Guide roller (supply)
Impedance roller
Full erase head
Guide pole (supply)
Tension pole
Guide pin
Video head (rotating cylinder)
Inclined guide (take-up)
Guide roller (take-up)
Guide pole (take-up)
Pressure roller
Capstan shaft
Audio/control head
Half loading pole

Fig. 1 Tape Transport System

6. Inspection Locations

	Phenomenon	Inspection Location	Replacement
①	Colour beats	Dirt on full erase head	
②	Poor S/N, no colour	Dirt on video heads	○
③	Vertical jitter	Dirt on video heads Dirt in tape transport system	
④	Low volume, sound disordered	Dirt on audio/control head	○
⑤	Tape does not run. Tape is slack.	Dirt on pressure roller	○

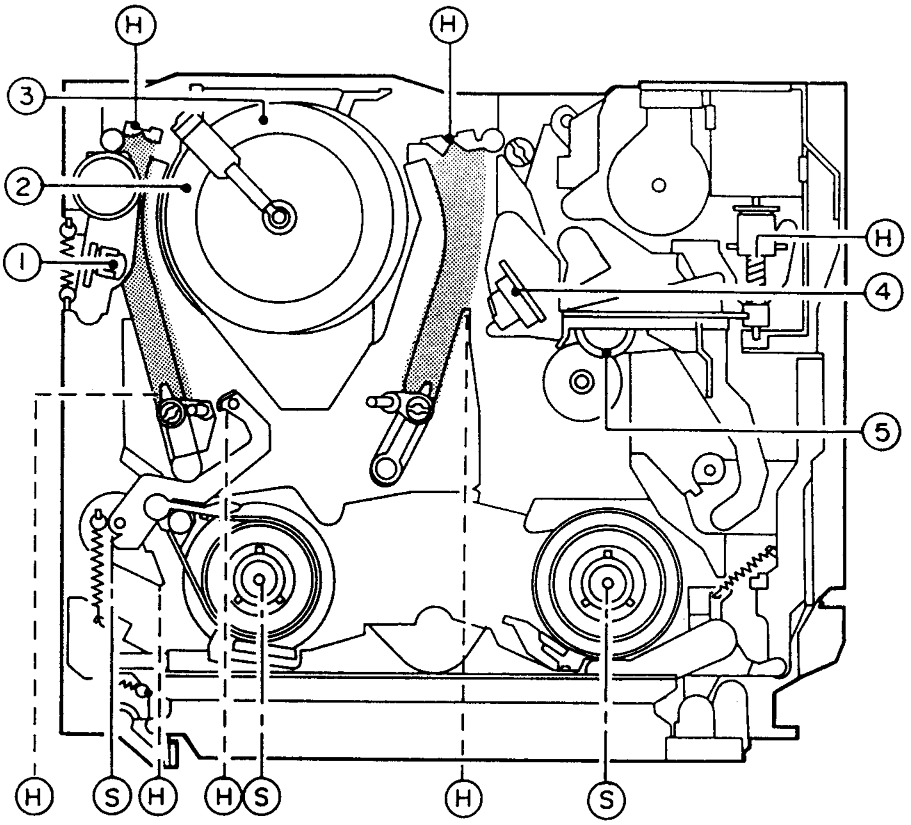


Fig. 2 Top View of Mechanism

Phenomenon	Inspection Location	Replacement
Does not fast forward or rewind, or rotation is slow Tape does not run Slack tape	Dirt on reel belt	○

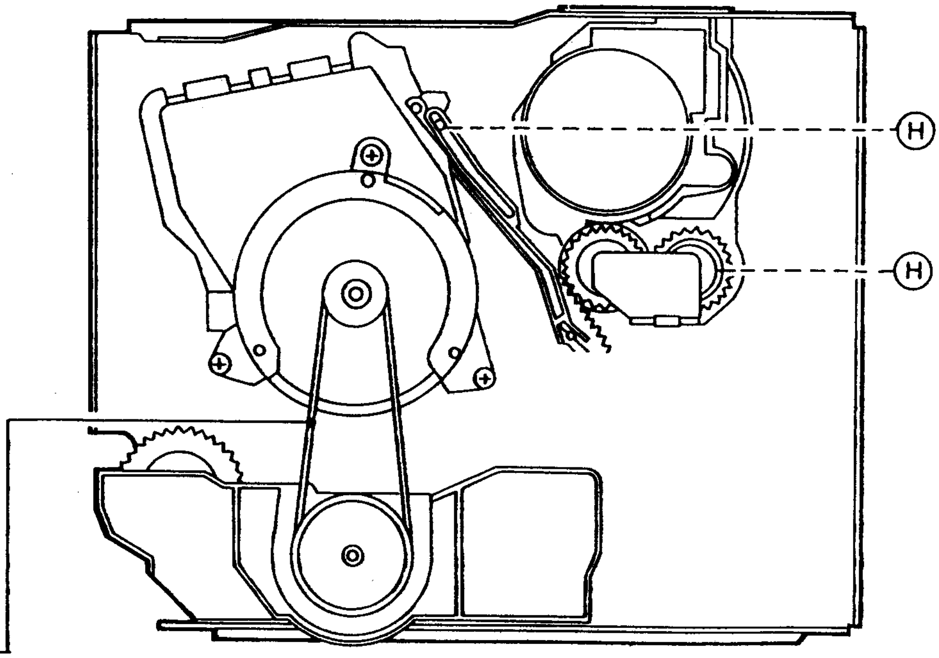


Fig. 3 Bottom View of Mechanism

Note:

If locations marked with "o" do not operate normally after cleaning, they are worn. Replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.

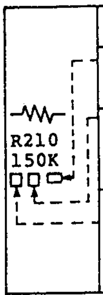
Ⓢ : Sonic Slidas oil (oil locations)
Ⓗ : Hitazol (grease locations)

SCHEMATIC/CIRCUIT BOARD DIAGRAMS

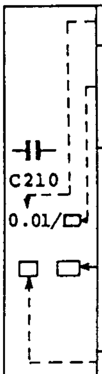
BEFORE USING THIS SERVICE REFERENCE MATERIAL

How to read abbreviations

(Resistors)

	Value	Not indicated .. Ω(ohm) K .... kΩ
	Tolerance	Not indicated .. ±5% K .... ±10% M .... ±20%
	Wattage	Not indicated .. 1/8W (All values other than 1/8W are indicated in the schematic diagrams with W omitted)
	Sort	Not indicated .. Carbon film RC .... Carbon solid RW .... Wire wound RS .... Metal oxide film RN .... Metal film
Example:		R120 ..... 150kohm, carbon solid RC1/2K 1/2W, ±10%

(Capacitors)

	Value	Not indicated .. μF P .... PF
	Dielectric strength	Not indicated .. 50WV (All values other than 50WV and electrolytic capacitors are indicated in the schematic diagrams with WV omitted)
	Tolerance	Not indicated .. ±10% J .... ±5% M .... ±20% C .... ±0.25PF Z .... +80% -20% (No tolerance is indicated for electrolytic capacitors (excluding tantalum and high stability electrolytic capacitors))
	Sort	Not indicated .. Ceramic General electrolytic (distinguished from ceramic with circuit symbol) MYL .... Mylar (polyester film) STY .... Styrol TA .... Tantalum KU .... High stability electrolytic MP .... Metalized paper
Example:		⊣⊢ C210 0.01/25 ... Mylar, 0.01μF, 25WV, ±5% MYL J

Notes:

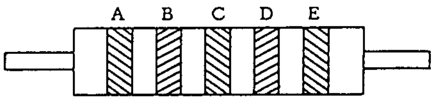
1. Voltages are measured with the negative ⊖ terminal of the power supply as reference in the normal operating mode. The voltages in different modes are indicated in the schematic diagrams; those in parentheses ( ) are in the record mode and those without parentheses are in the play mode.
2. The value, dielectric strength (wattage), tolerance and sort of resistors (excluding variable resistors, etc.) and capacitors are indicated in the schematic diagrams by abbreviations. Replace them correctly, comparing the abbreviations in the schematic diagrams and the table "how to read abbreviations".

Cautions on use of MOS IC

1. The MOS IC is inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during their storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them into styrol foam.
2. High voltages may be applied during soldering caused by leakages from the soldering iron, so be sure to ground the tip of the soldering iron or use a low voltage soldering iron.
3. The human body, clothes made of synthetic fibres or nylon gloves may be charged with several thousands volts of static electricity because of friction, so a worker should be earthed.
4. Be sure to earth measuring instruments such as oscilloscopes, VTVMs, etc. used for repairs.

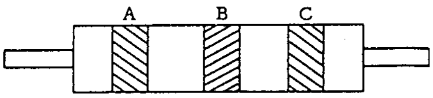
How to read capacity and inductance of resistor shape capacitors and coils

CAPACITOR



CAPACITY: (10A+B) x C (PF)
TOLERANCE: D
RATED VOLTAGE: BODY COLOUR
PINK: 25V
GREEN: 50V
CHARACTERISTICS: E

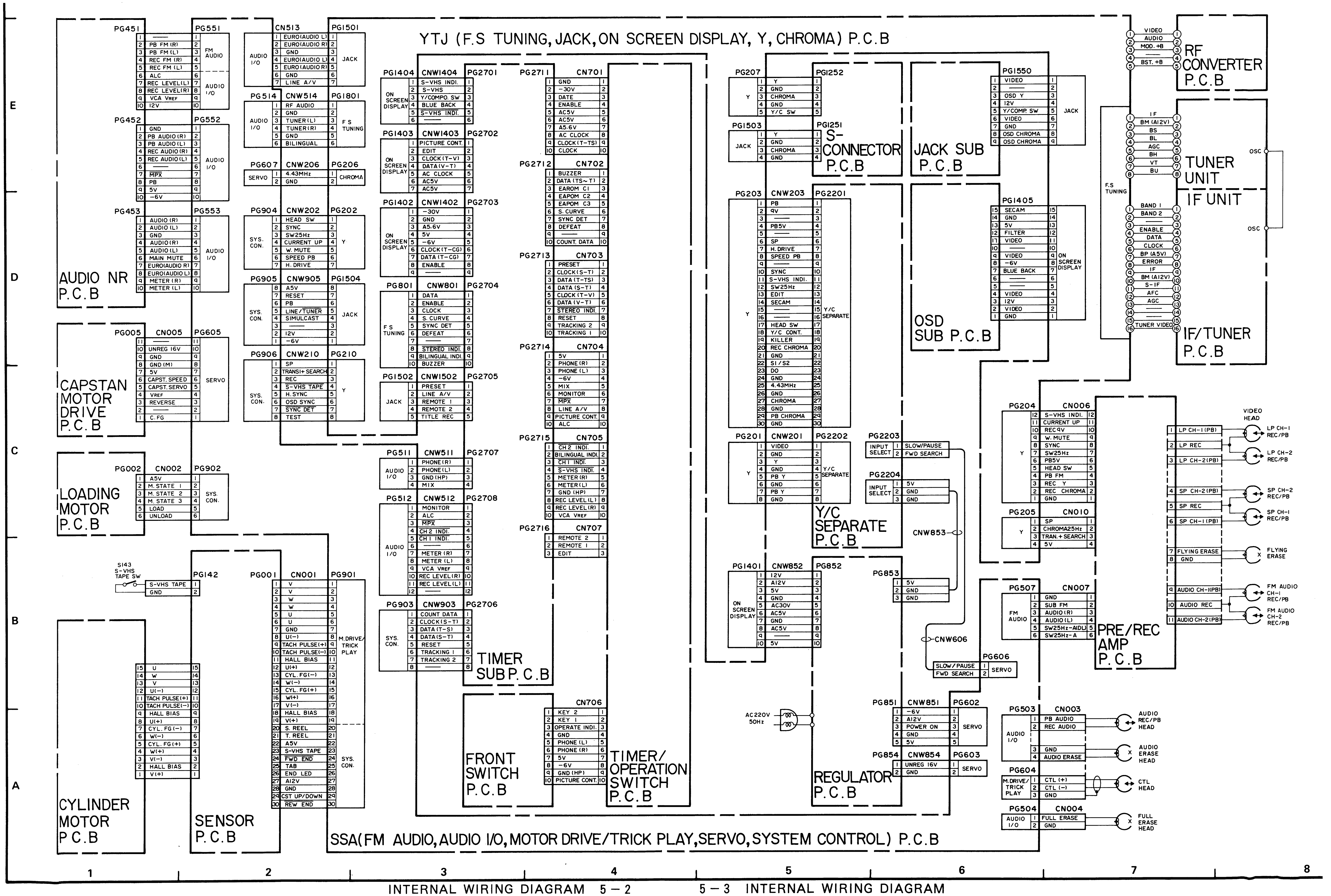
COIL



INDUCTANCE: (10A+B) x C (μH)

COLOUR	A,B	C	D	E
Black	0	10^0	±20%	For temperature compensation
Brown	1	10^1		
Red	2	10^2		
Orange	3	10^3		
Yellow	4	10^4		
Green	5	10^5		
Blue	6			
Violet	7			
Grey	8		±30%	High dielectric constant type
White	9			For temperature compensation
Gold		10^{-1}	±5%	
Silver		10^{-2}	±10%	High dielectric constant type

INTERNAL WIRING DIAGRAM (KABELANSCHLUSSDIAGRAMM)


YTJ (F.S TUNING, JACK, ON SCREEN DISPLAY, Y, CHROMA) P.C.B
SSA(FM AUDIO, AUDIO I/O, MOTOR DRIVE/TRICK PLAY, SERVO, SYSTEM CONTROL) P.C.B
AUDIO NR P.C.B
PG451 PG551
1 —
2 PB FM (R)
3 PB FM (L)
4 REC FM (R)
5 REC FM (L)
6 ALC
7 REC LEVEL(L)
8 REC LEVEL(R)
9 VCA VREF
10 12V
FM AUDIO
AUDIO I/O
PG452 PG552
1 GND
2 PB AUDIO (R)
3 PB AUDIO (L)
4 REC AUDIO (R)
5 REC AUDIO (L)
6 —
7 MPX
8 PB
9 5V
10 −6V
AUDIO I/O
PG453 PG553
1 AUDIO (R)
2 AUDIO (L)
3 GND
4 AUDIO (R)
5 AUDIO (L)
6 MAIN MUTE
7 EURO(AUDIO R)
8 EURO(AUDIO L)
9 METER (R)
10 METER (L)
AUDIO I/O
CAPSTAN MOTOR DRIVE P.C.B
PG005 CN005 PG605
11 —
10 UNREG 16V
9 GND
8 GND (M)
7 5V
6 CAPST. SPEED
5 CAPST. SERVO
4 VREF
3 REVERSE
2 —
1 C.FG
SERVO
LOADING MOTOR P.C.B
PG002 CN002 PG902
1 A5V
2 M. STATE 1
3 M. STATE 2
4 M. STATE 3
5 LOAD
6 UNLOAD
SYS. CON.
S143 S-VHS TAPE SW
PG142
1 S-VHS TAPE
2 GND
CYLINDER MOTOR P.C.B
15 U
14 W
13 V
12 U(−)
11 TACH PULSE(+)
10 TACH PULSE(−)
9 HALL BIAS
8 U(+)
7 CYL. FG(−)
6 W(−)
5 CYL. FG(+)
4 W(+)
3 V(−)
2 HALL BIAS
1 V(+)
SENSOR P.C.B
PG001 CN001 PG901
1 V
2 V
3 W
4 W
5 U
6 U
7 GND
8 U(−)
9 TACH PULSE(+)
10 TACH PULSE(−)
11 HALL BIAS
12 U(+)
13 CYL. FG(−)
14 W(−)
15 CYL. FG(+)
16 W(+)
17 V(−)
18 HALL BIAS
19 V(+)
20 S. REEL
21 T. REEL
22 A5V
23 S-VHS TAPE
24 FWD END
25 TAB
26 END LED
27 A12V
28 GND
29 CST UP/DOWN
30 REW END
M.DRIVE/ TRICK PLAY
SYS. CON.
CN513 PG1501
AUDIO I/O
1 EURO(AUDIO L)
2 EURO(AUDIO R)
3 GND
4 EURO(AUDIO L)
5 EURO(AUDIO R)
6 GND
7 LINE A/V
JACK
PG514 CNW514 PG1801
AUDIO I/O
1 RF AUDIO
2 GND
3 TUNER(L)
4 TUNER(R)
5 GND
6 BILINGUAL
F S TUNING
PG607 CNW206 PG206
SERVO
1 4.43MHz
2 GND
CHROMA
PG904 CNW202 PG202
SYS. CON.
1 HEAD SW
2 SYNC
3 SW25Hz
4 CURRENT UP
5 W. MUTE
6 SPEED PB
7 H. DRIVE
Y
PG905 CNW905 PG1504
SYS. CON.
8 A5V
7 RESET
6 PB
5 LINE/TUNER
4 SIMULCAST
3 —
2 12V
1 −6V
JACK
PG906 CNW210 PG210
SYS. CON.
1 SP
2 TRANS.+SEARCH
3 REC
4 S-VHS TAPE
5 H.SYNC
6 OSD SYNC
7 SYNC DET
8 TEST
Y
PG1404 CNW1404 PG2701
ON SCREEN DISPLAY
1 S-VHS INDI.
2 S-VHS
3 Y/COMPO. SW
4 BLUE BACK
5 S-VHS INDI.
6 —
PG1403 CNW1403 PG2702
ON SCREEN DISPLAY
1 PICTURE CONT.
2 EDIT
3 CLOCK(T−V)
4 DATA(V−T)
5 AC CLOCK
6 AC5V
7 AC5V
PG1402 CNW1402 PG2703
ON SCREEN DISPLAY
1 −30V
2 GND
3 A5.6V
4 5V
5 −6V
6 CLOCK(T−CG)
7 DATA(T−CG)
8 ENABLE
9 —
PG801 CNW801 PG2704
F S TUNING
1 DATA
2 ENABLE
3 CLOCK
4 S. CURVE
5 SYNC DET
6 DEFEAT
7 —
8 STEREO INDI.
9 BILINGUAL INDI.
10 BUZZER
PG1502 CNW1502 PG2705
JACK
1 PRESET
2 LINE A/V
3 REMOTE 1
4 REMOTE 2
5 TITLE REC
PG511 CNW511 PG2707
AUDIO I/O
1 PHONE(R)
2 PHONE(L)
3 GND(HP)
4 MIX
PG512 CNW512 PG2708
AUDIO I/O
1 MONITOR
2 ALC
3 MPX
4 CH 2 INDI.
5 CH 1 INDI.
6 —
7 METER(R)
8 METER(L)
9 VCA VREF
10 REC LEVEL(R)
11 REC LEVEL(L)
12 —
PG903 CNW903 PG2706
SYS. CON.
1 COUNT DATA
2 CLOCK(S−T)
3 DATA(T−S)
4 DATA(S−T)
5 RESET
6 TRACKING 1
7 TRACKING 2
8 —
TIMER SUB P.C.B
PG2711 CN701
1 GND
2 −30V
3 DATE
4 ENABLE
5 AC5V
6 AC5V
7 A5.6V
8 AC CLOCK
9 CLOCK(T−TS)
10 CLOCK
PG2712 CN702
1 BUZZER
2 DATA(TS−T)
3 EAROM C1
4 EAPOM C2
5 EAPOM C3
6 S. CURVE
7 SYNC DET
8 DEFEAT
9 —
10 COUNT. DATA
PG2713 CN703
1 PRESET
2 CLOCK(S−T)
3 DATA(T−TS)
4 DATA(S−T)
5 CLOCK(T−V)
6 DATA(V−T)
7 STEREO INDI.
8 RESET
9 TRACKING 2
10 TRACKING 1
PG2714 CN704
1 5V
2 PHONE(R)
3 PHONE(L)
4 −6V
5 MIX
6 MONITOR
7 MPX
8 LINE A/V
9 PICTURE CONT.
10 ALC
PG2715 CN705
1 CH2 INDI.
2 BILINGUAL INDI.
3 CH1 INDI.
4 S-VHS INDI.
5 METER(R)
6 METER(L)
7 GND(HP)
8 REC LEVEL(L)
9 REC LEVEL(R)
10 VCA VREF
PG2716 CN707
1 REMOTE 2
2 REMOTE 1
3 EDIT
CN706
1 KEY 2
2 KEY 1
3 OPERATE INDI.
4 GND
5 PHONE(L)
6 PHONE(R)
7 5V
8 −6V
9 GND(HP)
10 PICTURE CONT.
FRONT SWITCH P.C.B
TIMER/ OPERATION SWITCH P.C.B
PG207 PG1252
Y
1 Y
2 GND
3 CHROMA
4 GND
5 Y/C SW
PG1503 PG1251
JACK
1 Y
2 GND
3 CHROMA
4 GND
S-CONNECTOR P.C.B
JACK SUB P.C.B
PG1550
1 VIDEO
2 —
3 OSD Y
4 12V
5 Y/COMP. SW
6 VIDEO
7 GND
8 OSD CHROMA
9 OSD CHROMA
JACK
PG203 CNW203 PG2201
Y
1 PB
2 9V
3 —
4 PB5V
5 —
6 SP
7 H. DRIVE
8 SPEED PB
9 —
10 SYNC
11 S-VHS INDI.
12 SW25Hz
13 EDIT
14 SECAM
15 —
16 —
17 HEAD SW
18 Y/C CONT.
19 KILLER
20 REC CHROMA
21 GND
22 S1/S2
23 DO
24 GND
25 4.43MHz
26 GND
27 CHROMA
28 GND
29 PB CHROMA
30 GND
Y/C SEPARATE
PG1405
15 SECAM
14 GND
13 5V
12 FILTER
11 VIDEO
10 —
9 VIDEO
8 −6V
7 BLUE BACK
6 —
5 —
4 VIDEO
3 12V
2 VIDEO
1 GND
ON SCREEN DISPLAY
OSD SUB P.C.B
PG201 CNW201 PG2202
Y
1 VIDEO
2 GND
3 Y
4 GND
5 PB Y
6 GND
7 PB Y
8 GND
Y/C SEPARATE
Y/C SEPARATE P.C.B
PG2203
INPUT SELECT
1 SLOW/PAUSE
2 FWD SEARCH
PG2204
INPUT SELECT
1 5V
2 GND
3 GND
CNW853
PG1401 CNW852 PG852
ON SCREEN DISPLAY
1 12V
2 A12V
3 5V
4 GND
5 AC30V
6 AC5V
7 GND
8 AC5V
9 —
10 5V
PG853
1 5V
2 GND
3 GND
CNW606
PG606
SLOW/PAUSE 1
FWD SEARCH 2
SERVO
AC220V 50Hz
PG851 CNW851 PG602
1 −6V
2 A12V
3 POWER ON
4 GND
5 5V
SERVO
PG854 CNW854 PG603
1 UNREG 16V
2 GND
SERVO
REGULATOR P.C.B
① VIDEO
② AUDIO
③ MOD.+B
④ —
⑤ BST.+B
RF CONVERTER P.C.B
IF
BM (A12V)
BS
BL
AGC
BH
VT
BU
TUNER UNIT
OSC
F.S TUNING
IF UNIT
BAND 1
BAND 2
—
ENABLE
DATA
CLOCK
BP (A5V)
ERROR
IF
BM (A12V)
S-IF
AFC
AGC
—
—
TUNER VIDEO
OSC
IF/TUNER P.C.B
PG204 CN006
Y
12 S-VHS INDI.
11 CURRENT UP
10 REC 9V
9 W. MUTE
8 SYNC
7 SW25Hz
6 PB5V
5 HEAD SW
4 PB FM
3 REC Y
2 REC CHROMA
1 GND
PG205 CN010
Y
1 SP
2 CHROMA25Hz
3 TRAN.+SEARCH
4 5V
PG507 CN007
FM AUDIO
1 GND
2 SUB FM
3 AUDIO(R)
4 AUDIO(L)
5 SW25Hz-A(DL)
6 SW25Hz-A
PRE/REC AMP P.C.B
1 LP CH-1(PB)
2 LP REC
3 LP CH-2(PB)
4 SP CH-2(PB)
5 SP REC
6 SP CH-1(PB)
7 FLYING ERASE
8 GND
9 AUDIO CH-1(PB)
10 AUDIO REC
11 AUDIO CH-2(PB)
VIDEO HEAD
LP CH-1 REC/PB
LP CH-2 REC/PB
SP CH-2 REC/PB
SP CH-1 REC/PB
FLYING ERASE
FM AUDIO CH-1 REC/PB
FM AUDIO CH-2 REC/PB
PG503 CN003
AUDIO I/O
1 PB AUDIO
2 REC AUDIO
3 GND
4 AUDIO ERASE
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
PG604
M.DRIVE/ TRICK PLAY
1 CTL (+)
2 CTL (−)
3 GND
CTL HEAD
PG504 CN004
AUDIO I/O
1 FULL ERASE
2 GND
FULL ERASE HEAD
E
D
C
B
A
1
2
3
4
5
6
7
8

TIMER SUB SCHEMATIC DIAGRAM (TIMER–HILFS)

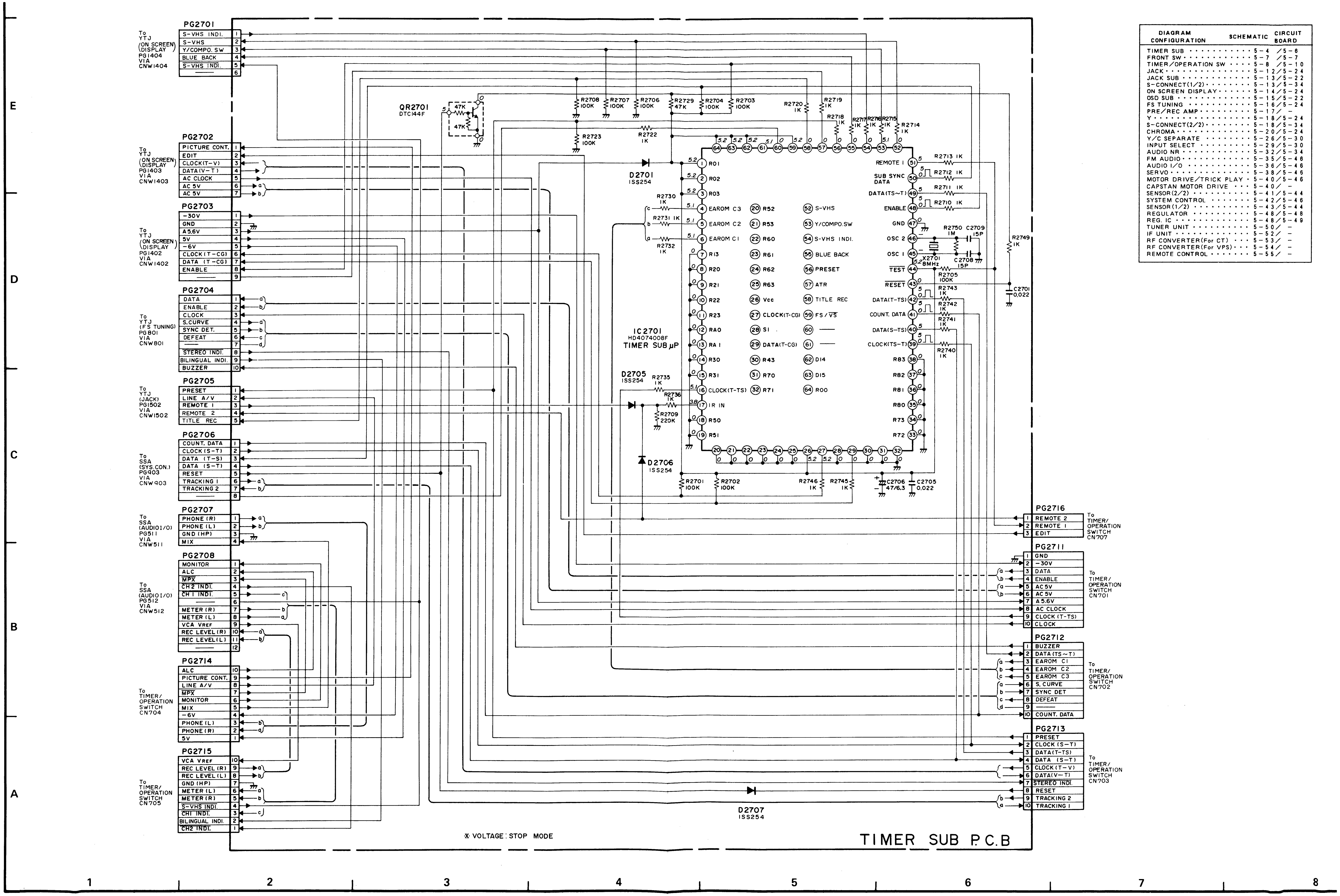
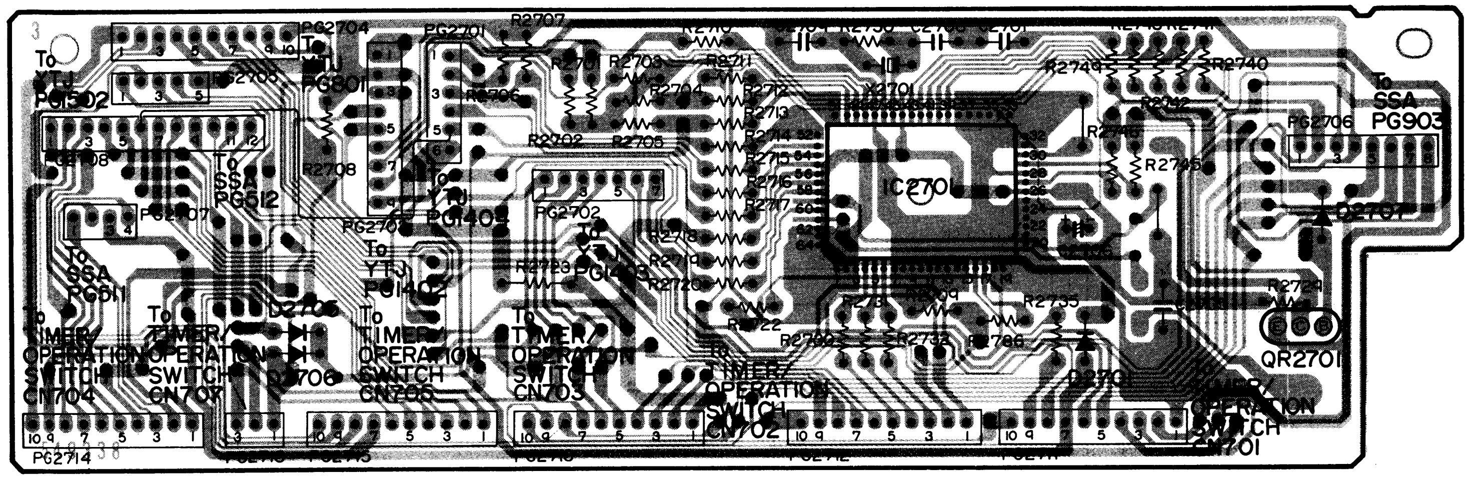

E
D
C
B
A
1
2
3
4
5
6
7
8
PG2701
To YTJ (ON SCREEN DISPLAY) PG1404 VIA CNW1404
1 S-VHS INDI.
2 S-VHS
3 Y/COMPO. SW
4 BLUE BACK
5 S-VHS INDI.
6 ——
PG2702
To YTJ (ON SCREEN DISPLAY) PG1403 VIA CNW1403
1 PICTURE CONT.
2 EDIT
3 CLOCK(T–V)
4 DATA(V–T)
5 AC CLOCK
6 AC 5V
7 AC 5V
PG2703
To YTJ (ON SCREEN DISPLAY) PG1402 VIA CNW1402
1 –30V
2 GND
3 A5.6V
4 5V
5 –6V
6 CLOCK(T–CG)
7 DATA (T–CG)
8 ENABLE
9 ——
PG2704
To YTJ (FS TUNING) PG801 VIA CNW801
1 DATA
2 ENABLE
3 CLOCK
4 S.CURVE
5 SYNC DET.
6 DEFEAT
7 ——
8 STEREO INDI.
9 BILINGUAL INDI.
10 BUZZER
PG2705
To YTJ (JACK) PG1502 VIA CNW1502
1 PRESET
2 LINE A/V
3 REMOTE 1
4 REMOTE 2
5 TITLE REC
PG2706
To SSA (SYS.CON.) PG903 VIA CNW903
1 COUNT. DATA
2 CLOCK(S–T)
3 DATA (T–S)
4 DATA (S–T)
5 RESET
6 TRACKING 1
7 TRACKING 2
8 ——
PG2707
To SSA (AUDIO I/O) PG511 VIA CNW511
1 PHONE (R)
2 PHONE (L)
3 GND (HP)
4 MIX
PG2708
To SSA (AUDIO I/O) PG512 VIA CNW512
1 MONITOR
2 ALC
3 MPX
4 CH2 INDI.
5 CH1 INDI.
6 ——
7 METER (R)
8 METER (L)
9 VCA VREF
10 REC LEVEL (R)
11 REC LEVEL (L)
12 ——
PG2714
To TIMER/OPERATION SWITCH CN704
10 ALC
9 PICTURE CONT.
8 LINE A/V
7 MPX
6 MONITOR
5 MIX
4 –6V
3 PHONE (L)
2 PHONE (R)
1 5V
PG2715
To TIMER/OPERATION SWITCH CN705
10 VCA VREF
9 REC LEVEL (R)
8 REC LEVEL (L)
7 GND (HP)
6 METER (L)
5 METER (R)
4 S-VHS INDI.
3 CH1 INDI.
2 BILINGUAL INDI.
1 CH2 INDI.
QR2701 DTC144F
47K
47K
R2708 100K
R2707 100K
R2706 100K
R2729 47K
R2704 100K
R2703 100K
R2720 1K
R2719 1K
R2718 1K
R2717 1K
R2716 1K
R2715 1K
R2714 1K
R2723 100K
R2722 1K
D2701 1SS254
R2730 1K
R2731 1K
R2732 1K
IC2701 HD4074008F TIMER SUB μP
D2705 1SS254
R2735 1K
R2736 1K
R2709 220K
D2706 1SS254
R2701 100K
R2702 100K
R2746 1K
R2745 1K
C2706 47/6.3
C2705 0.022
R2713 1K
R2712 1K
R2711 1K
R2710 1K
R2750 1M
C2709 15P
C2708 15P
X2701 8MHz
R2705 100K
R2749 1K
C2701 0.022
R2743 1K
R2742 1K
R2741 1K
R2740 1K
1 R01
2 R02
3 R03
4 EAROM C3
5 EAROM C2
6 EAROM C1
7 R13
8 R20
9 R21
10 R22
11 R23
12 RA0
13 RA1
14 R30
15 R31
16 CLOCK(T-TS)
17 IR IN
18 R50
19 R51
20 R52
21 R53
22 R60
23 R61
24 R62
25 R63
26 Vcc
27 CLOCK(T-CG)
28 SI
29 DATA(T-CG)
30 R43
31 R70
32 R71
33 R72
34 R73
35 R80
36 R81
37 R82
38 R83
39 CLOCK(TS–T)
40 DATA(S–TS)
41 COUNT. DATA
42 DATA(T–TS)
43 RESET
44 TEST
45 OSC 1
46 OSC 2
47 GND
48 ENABLE
49 DATA(TS–T)
50 SUB SYNC DATA
51 REMOTE 1
52 S-VHS
53 Y/COMPO.SW
54 S-VHS INDI.
55 BLUE BACK
56 PRESET
57 ATR
58 TITLE REC
59 FS/VS
60 ——
61 ——
62 D14
63 D15
64 R00
5.2
5.1
3.8
0
PG2716
To TIMER/OPERATION SWITCH CN707
1 REMOTE 2
2 REMOTE 1
3 EDIT
PG2711
To TIMER/OPERATION SWITCH CN701
1 GND
2 –30V
3 DATA
4 ENABLE
5 AC5V
6 AC 5V
7 A5.6V
8 AC CLOCK
9 CLOCK (T-TS)
10 CLOCK
PG2712
To TIMER/OPERATION SWITCH CN702
1 BUZZER
2 DATA (TS~T)
3 EAROM C1
4 EAROM C2
5 EAROM C3
6 S. CURVE
7 SYNC DET
8 DEFEAT
9 ——
10 COUNT. DATA
PG2713
To TIMER/OPERATION SWITCH CN703
1 PRESET
2 CLOCK (S–T)
3 DATA(T–TS)
4 DATA (S–T)
5 CLOCK(T–V)
6 DATA(V–T)
7 STEREO INDI.
8 RESET
9 TRACKING 2
10 TRACKING 1
D2707 1SS254
※ VOLTAGE: STOP MODE
TIMER SUB P.C.B

DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5–4	/5–6
FRONT SW	5–7	/5–7
TIMER/OPERATION SW	5–8	/5–10
JACK	5–12	/5–24
JACK SUB	5–13	/5–22
S–CONNECT(1/2)	5–13	/5–34
ON SCREEN DISPLAY	5–14	/5–24
OSD SUB	5–15	/5–22
FS TUNING	5–16	/5–24
PRE/REC AMP	5–17	/ –
Y	5–18	/5–24
S–CONNECT(2/2)	5–18	/5–34
CHROMA	5–20	/5–24
Y/C SEPARATE	5–26	/5–30
INPUT SELECT	5–29	/5–30
AUDIO NR	5–32	/5–34
FM AUDIO	5–35	/5–46
AUDIO I/O	5–36	/5–46
SERVO	5–38	/5–46
MOTOR DRIVE/TRICK PLAY	5–40	/5–46
CAPSTAN MOTOR DRIVE	5–40	/ –
SENSOR(2/2)	5–41	/5–44
SYSTEM CONTROL	5–42	/5–46
SENSOR(1/2)	5–43	/5–44
REGULATOR	5–48	/5–48
REG. IC	5–48	/5–49
TUNER UNIT	5–50	/ –
IF UNIT	5–52	/ –
RF CONVERTER(For CT)	5–53	/ –
RF CONVERTER(For VPS)	5–54	/ –
REMOTE CONTROL	5–55	/ –

TIMER SUB CIRCUIT BOARD DIAGRAM (TIMER−HILFS)


To YTJ PG502
PG2704
PG2701
R2707
To PG801
PG2708
PG2706
To SSA PG903
To SSA PG512
R2708
PG2703
PG1403
IC2701
R2740
R2749
R2745
Q2707
R2724
QR2701
To SSA PG511
To YTJ PG1402
To TIMER/ OPERATION SWITCH CN704
To TIMER/ OPERATION SWITCH CN707
To TIMER/ OPERATION SWITCH CN705
To TIMER/ OPERATION SWITCH CN703
To TIMER/ OPERATION SWITCH CN702
To TIMER/ OPERATION SWITCH CN701
D2705
D2706
D2701
R2702
R2705
R2735
R2736
R2739
PG2714
PG2713
PG2712
PG2711

▒ Component Side ▓ Solder Side ● Through Hole

TIMER SUB P.C.B

※ VOLTAGE: STOP MODE

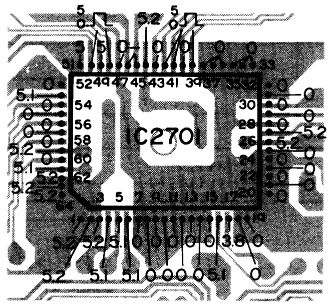
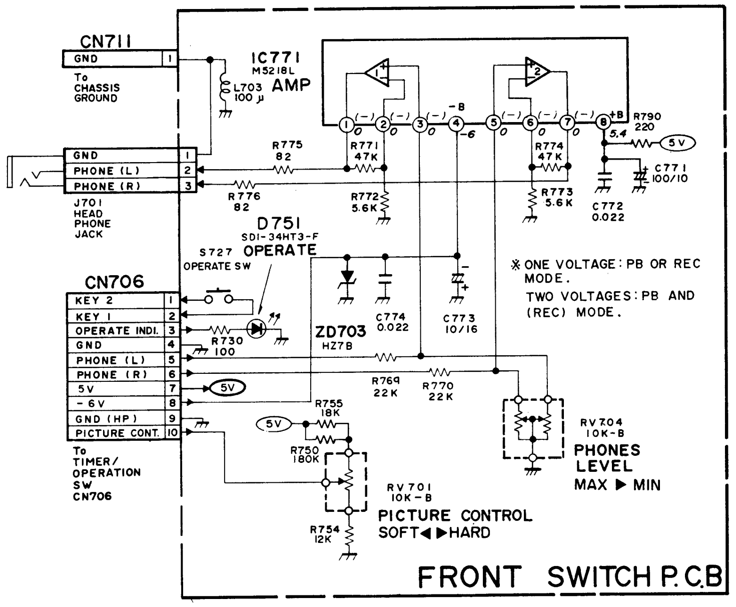

IC2701
5.1
5.2
5.1
5.2
5.2
5
5.2
0
5.2
52
54
56
58
60
30
32
2
5
7
9
11
13
15
17
5.2
5.2
5.1
5.1
0
0
0
0
5.2
5.1
5.1
0
0
0
0.5
1
0

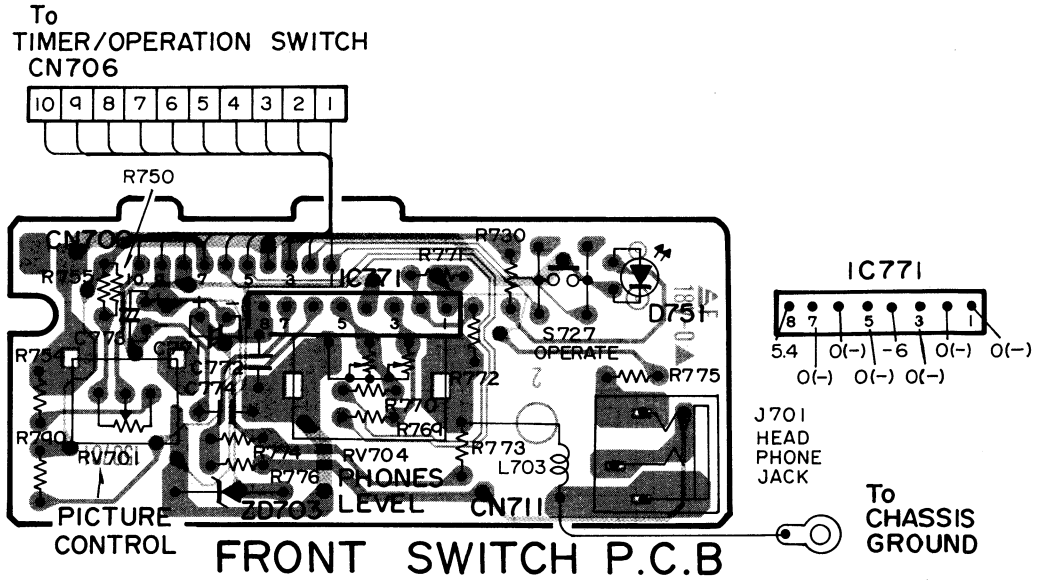
DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5−4	/5−6
FRONT SW	5−7	/5−7
TIMER/OPERATION SW	5−8	/5−10
JACK	5−12	/5−24
JACK SUB	5−13	/5−22
S−CONNECT(1/2)	5−13	/5−34
ON SCREEN DISPLAY	5−14	/5−24
OSD SUB	5−15	/5−22
FS TUNING	5−16	/5−24
PRE/REC AMP	5−17	/ −
Y	5−18	/5−24
S−CONNECT(2/2)	5−18	/5−34
CHROMA	5−20	/5−24
Y/C SEPARATE	5−26	/5−30
INPUT SELECT	5−29	/5−30
AUDIO NR	5−32	/5−34
FM AUDIO	5−35	/5−46
AUDIO I/O	5−36	/5−46
SERVO	5−38	/5−46
MOTOR DRIVE/TRICK PLAY	5−40	/5−46
CAPSTAN MOTOR DRIVE	5−40	/ −
SENSOR(2/2)	5−41	/5−44
SYSTEM CONTROL	5−42	/5−46
SENSOR(1/2)	5−43	/5−44
REGULATOR	5−48	/5−48
REG. IC	5−48	/5−49
TUNER UNIT	5−50	/ −
IF UNIT	5−52	/ −
RF CONVERTER(For CT)	5−53	/ −
RF CONVERTER(For VPS)	5−54	/ −
REMOTE CONTROL	5−55	/ −

FRONT SWITCH SCHEMATIC DIAGRAM (FRONTSCHALTER)


CN711
GND 1
To CHASSIS GROUND
IC771 M5218L AMP
L703 100 µ
GND 1
PHONE (L) 2
PHONE (R) 3
J701 HEAD PHONE JACK
R775 82
R776 82
R771 47K
R772 5.6K
R774 47K
R773 5.6K
R790 220
5V
C771 100/10
C772 0.022
−B
+B
(−) 0
−6
5.4
D751 SDI-34HT3-F
S727 OPERATE SW
OPERATE
CN706
KEY 2 1
KEY 1 2
OPERATE INDI. 3
GND 4
PHONE (L) 5
PHONE (R) 6
5V 7
−6V 8
GND (HP) 9
PICTURE CONT. 10
To TIMER/ OPERATION SW CN706
R730 100
ZD703 HZ7B
C774 0.022
C773 10/16
R769 22K
R770 22K
R755 18K
R750 180K
R754 12K
RV701 10K−B
PICTURE CONTROL SOFT◀ ▶HARD
RV704 10K−B
PHONES LEVEL MAX ▶ MIN
FRONT SWITCH P.C.B

※ ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODE.

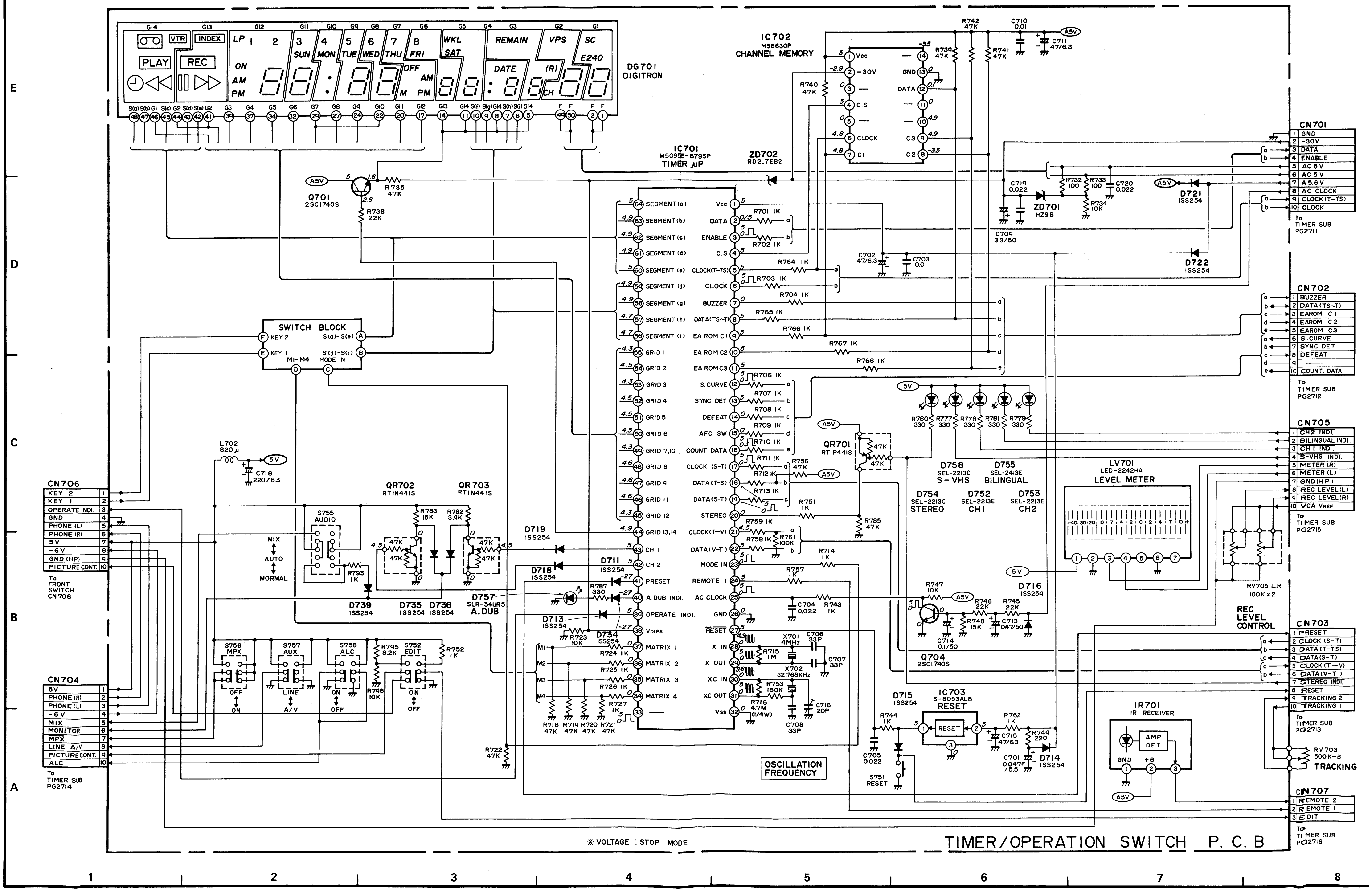
FRONT SWITCH CIRCUIT BOARD DIAGRAM (FRONTSCHALTER)


To TIMER/OPERATION SWITCH CN706
10 9 8 7 6 5 4 3 2 1
R750
CN706
R755
IC771
R771
R730
D751
S727 OPERATE
R754
R772
R775
R774
R769
R773
L703
R790
RV701
RV704 PHONES LEVEL
R776
ZD703
CN711
PICTURE CONTROL
FRONT SWITCH P.C.B
IC771
8 7 5 3 1
5.4 0(−) −6 0(−) 0(−)
0(−) 0(−) 0(−)
J701 HEAD PHONE JACK
To CHASSIS GROUND

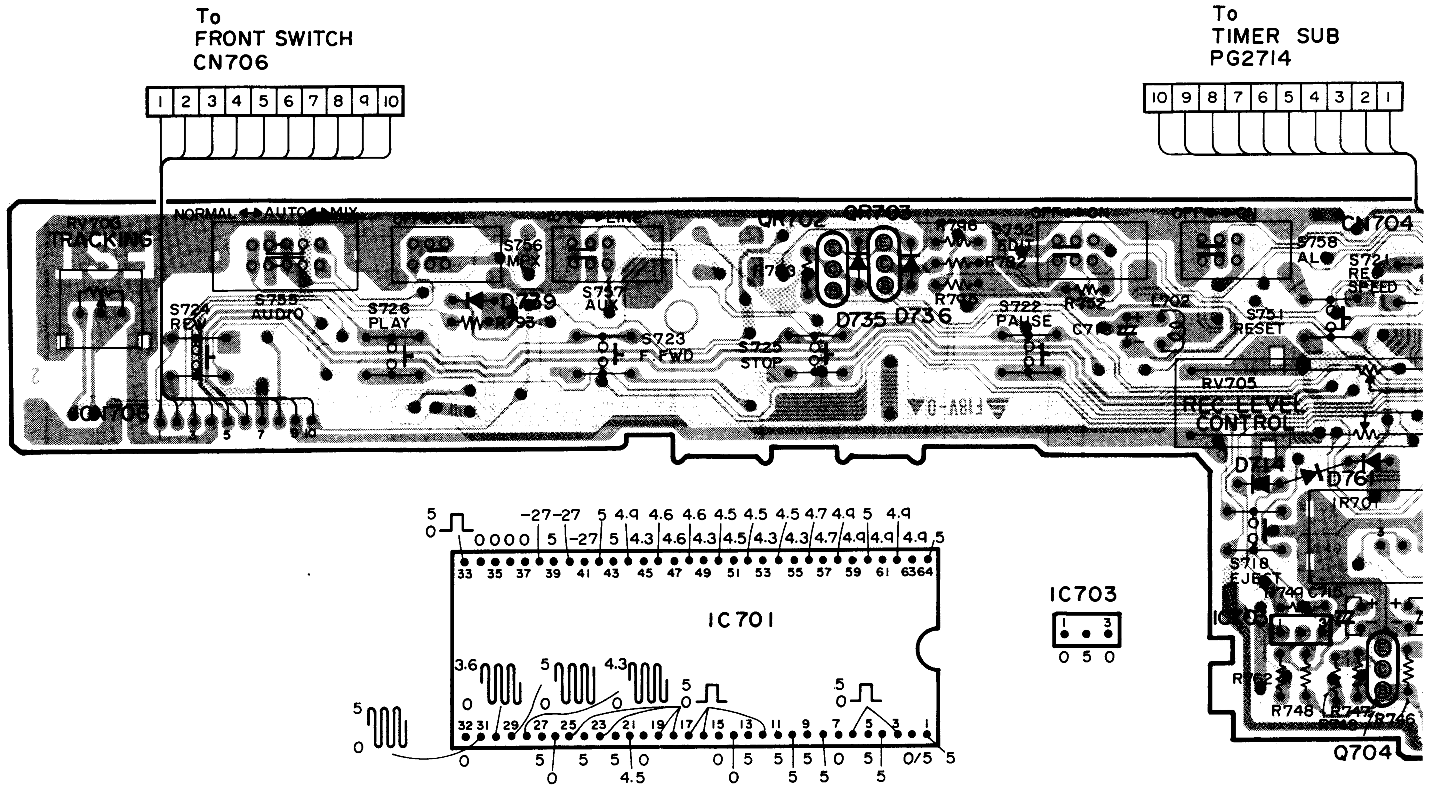
▒ : Component Side ▓ : Solder Side ● : Through Hole

※ ONE VOLTAGE : PB OR REC MODE
TWO VOLTAGES : PB AND (REC) MODE

TIMER/OPERATION SWITCH SCHEMATIC DIAGRAM (TIMER/FUNKTIONSSCHALTER)


DG701 DIGITRON
IC702 M58630P CHANNEL MEMORY
IC701 M50955-679SP TIMER µP
ZD702 RD2.7EB2
Q701 2SC1740S
SWITCH BLOCK
KEY 2
KEY 1
S(a)-S(e)
S(f)-S(i) MODE IN
M1-M4
CN701
GND
-30V
DATA
ENABLE
AC 5V
AC 5V
A 5.6V
AC CLOCK
CLOCK (T-TS)
CLOCK
To TIMER SUB PG2711
CN702
BUZZER
DATA (TS-T)
EAROM C1
EAROM C2
EAROM C3
S.CURVE
SYNC DET
DEFEAT
COUNT. DATA
To TIMER SUB PG2712
CN705
CH2 INDI.
BILINGUAL INDI.
CH1 INDI.
S-VHS INDI.
METER (R)
METER (L)
GND (HP)
REC LEVEL (L)
REC LEVEL (R)
VCA VREF
To TIMER SUB PG2715
CN703
PRESET
CLOCK (S-T)
DATA (T-TS)
DATA (S-T)
CLOCK (T-V)
DATA (V-T)
STEREO INDI.
RESET
TRACKING 2
TRACKING 1
To TIMER SUB PG2713
CN707
REMOTE 2
REMOTE 1
EDIT
To TIMER SUB PG2716
CN706
KEY 2
KEY 1
OPERATE INDI.
GND
PHONE (L)
PHONE (R)
5V
-6V
GND (HP)
PICTURE CONT.
To FRONT SWITCH CN706
CN704
5V
PHONE (R)
PHONE (L)
-6V
MIX
MONITOR
MPX
LINE A/V
PICTURE CONT.
ALC
To TIMER SUB PG2714
QR702 RTIN441S
QR703 RTIN441S
QR701 RTIP441S
S755 AUDIO
MIX
AUTO
MORMAL
S756 MPX
S757 AUX
S758 ALC
S752 EDIT
S751 RESET
D739 1SS254
D735 1SS254
D736 1SS254
D757 SLR-34UR5 A.DUB
D719 1SS254
D711 1SS254
D718 1SS254
D713 1SS254
D734 1SS254
D721 1SS254
D722 1SS254
ZD701 HZ9B
D758 SEL-2213C S-VHS
D755 SEL-2413E BILINGUAL
D754 SEL-2213C STEREO
D752 SEL-2213E CH1
D753 SEL-2213E CH2
LV701 LED-2242HA LEVEL METER
RV705 L.R 100K×2
REC LEVEL CONTROL
Q704 2SC1740S
D716 1SS254
D715 1SS254
IC703 S-8053ALB RESET
D714 1SS254
IR701 IR RECEIVER
AMP DET
RV703 500K-B TRACKING
X701 4MHz
X702 32.768KHz
L702 820µ
OSCILLATION FREQUENCY
※ VOLTAGE : STOP MODE
TIMER/OPERATION SWITCH P. C. B

TIMER/OPERATION SWITCH CIRCUIT BOARD DIAGRAM
(TIMER/FUNKTIONSSCHALTER)


To FRONT SWITCH CN706
1 2 3 4 5 6 7 8 9 10
To TIMER SUB PG2714
10 9 8 7 6 5 4 3 2 1
RV703 TRACKING
NORMAL ↔ AUTO ↔ MIX
S755 AUDIO
S726 PLAY
S724 REW
S756 MPX
D739
S757 AUX
S723 F.FWD
S725 STOP
CN708
QR702
QR703
D735 D736
S752 SOFT
R746
R782
S722 PAUSE
S758 AL
S721 REC SPEED
S751 RESET
CN704
RV705 REC LEVEL CONTROL
S718 EJECT
IR701
Q704
R748
IC701
IC703
1 3
0 5 0
5
0
-27 -27 5 4.9 4.6 4.6 4.5 4.5 4.5 4.7 4.9 5 4.9
0 0 0 0 5 -27 5 4.3 4.6 4.3 4.5 4.3 4.3 4.7 4.9 4.9 4.9 5
33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 64
32 31 29 27 25 23 21 19 17 15 13 11 9 7 5 3 1
3.6
4.3
0 5 5 5 0 0 5 5 5 0 5 0 0/5 5
0 4.5 0 5 5 5

※ VOLTAGE : STOP MODE.

TIMER/OPERATION SWITCH SCHEMATIC DIAGRAM
(OPERATION SWITCH SECTION)
(TIMER–FUNKTIONSSCHALTER)
(FUNKTIONSSCHALTER)

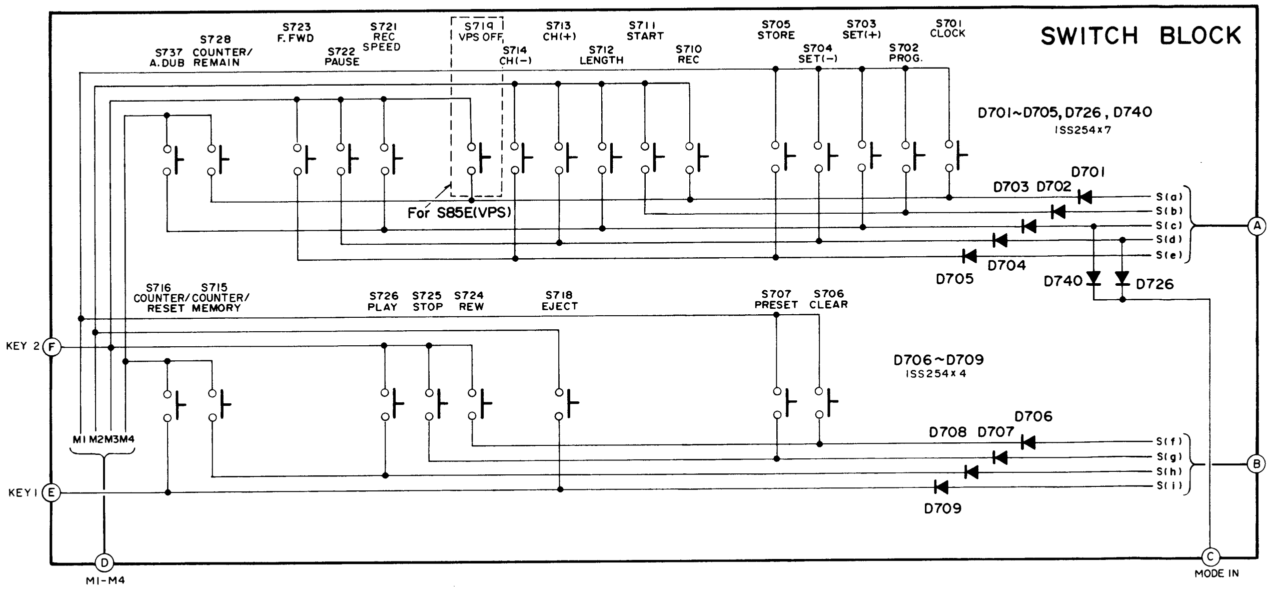
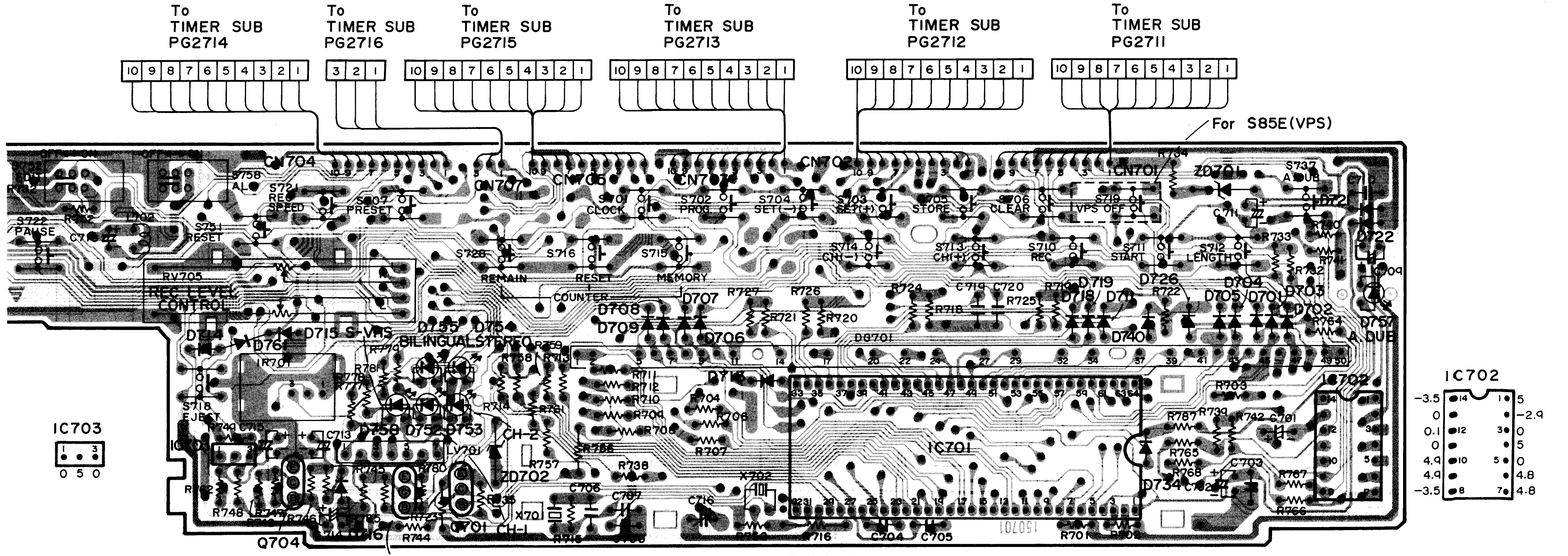

SWITCH BLOCK
S737 A.DUB
S728 COUNTER/ REMAIN
S723 F.FWD
S722 PAUSE
S721 REC SPEED
S719 VPS OFF
S714 CH(–)
S713 CH(+)
S712 LENGTH
S711 START
S710 REC
S705 STORE
S704 SET(–)
S703 SET(+)
S702 PROG.
S701 CLOCK
For S85E(VPS)
D701~D705, D726, D740
1SS254×7
D701
D703 D702
D704
D705
D740
D726
S(a)
S(b)
S(c)
S(d)
S(e)
A
S(a)– S(e)
S716 COUNTER/ RESET
S715 COUNTER/ MEMORY
S726 PLAY
S725 STOP
S724 REW
S718 EJECT
S707 PRESET
S706 CLEAR
D706~D709
1SS254×4
D706
D708 D707
D709
S(f)
S(g)
S(h)
S(i)
B
S(f)– S(i)
KEY 2 F
KEY 1 E
M1 M2 M3 M4
D
M1–M4
C
MODE IN

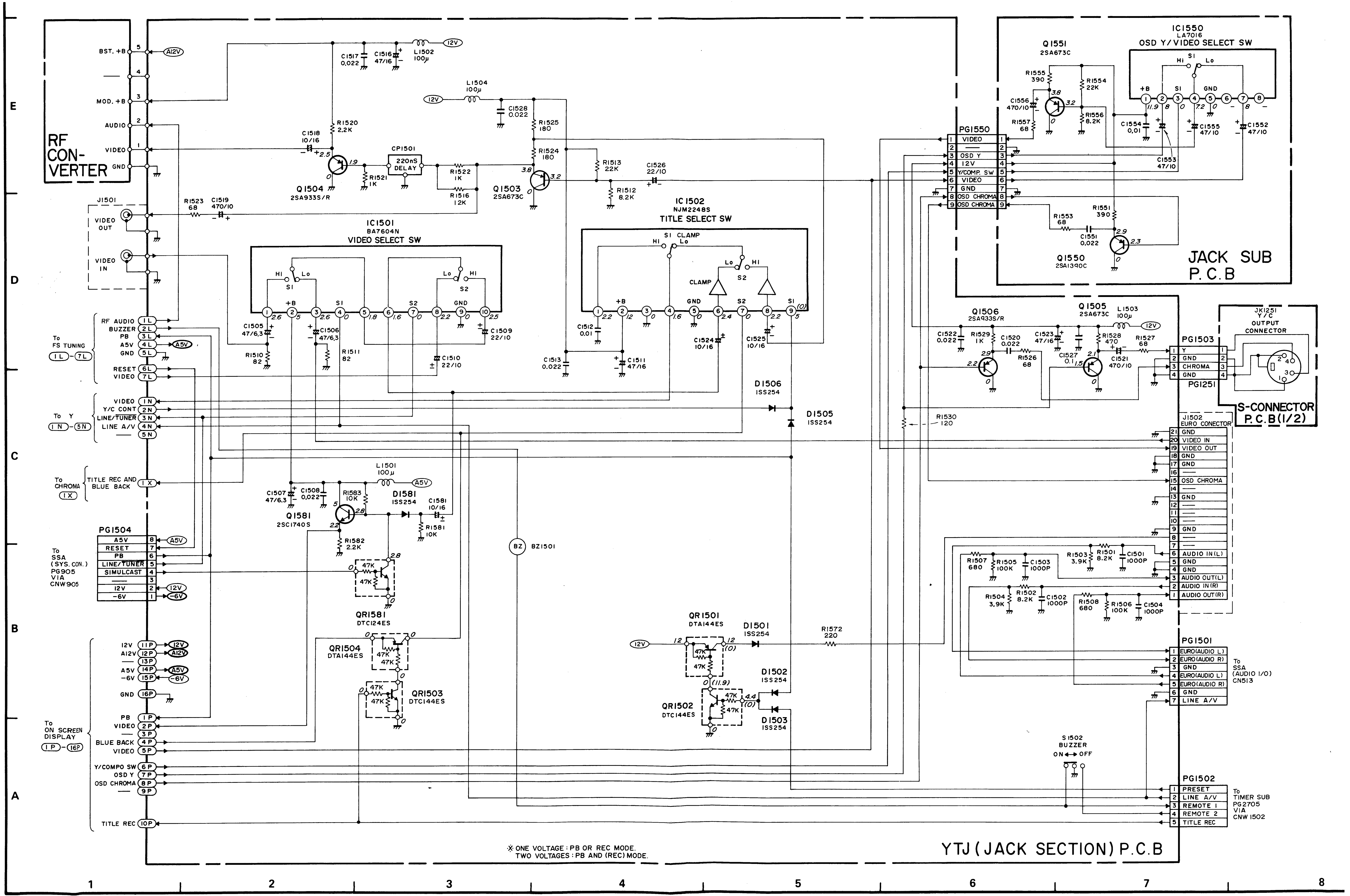
DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5–4	/5–6
FRONT SW	5–7	/5–7
TIMER/OPERATION SW	5–8	/5–10
JACK	5–12	/5–24
JACK SUB	5–13	/5–22
S-CONNECT(1/2)	5–13	/5–34
ON SCREEN DISPLAY	5–14	/5–24
OSD SUB	5–15	/5–22
FS TUNING	5–16	/5–24
PRE/REC AMP	5–17	/ –
Y	5–18	/5–24
S-CONNECT(2/2)	5–18	/5–34
CHROMA	5–20	/5–24
Y/C SEPARATE	5–26	/5–30
INPUT SELECT	5–29	/5–30
AUDIO NR	5–32	/5–34
FM AUDIO	5–35	/5–46
AUDIO I/O	5–36	/5–46
SERVO	5–38	/5–46
MOTOR DRIVE/TRICK PLAY	5–40	/5–46
CAPSTAN MOTOR DRIVE	5–40	/ –
SENSOR(2/2)	5–41	/5–44
SYSTEM CONTROL	5–42	/5–46
SENSOR(1/2)	5–43	/5–44
REGULATOR	5–48	/5–48
REG. IC	5–48	/5–49
TUNER UNIT	5–50	/ –
IF UNIT	5–52	/ –
RF CONVERTER(For CT)	5–53	/ –
RF CONVERTER(For VPS)	5–54	/ –
REMOTE CONTROL	5–55	/ –


To TIMER SUB PG2714
To TIMER SUB PG2716
To TIMER SUB PG2715
To TIMER SUB PG2713
To TIMER SUB PG2712
To TIMER SUB PG2711
10 9 8 7 6 5 4 3 2 1
3 2 1
For S85E(VPS)
CN704
CN707
CN705
CN703
CN702
CN701
S758 AL
S721 REC SPEED
S722 PAUSE
S751 RESET
S707 PRESET
S701 CLOCK
S702 PROG
S704 SET(–)
S703 SET(+)
S705 STORE
S706 CLEAR
S719 VPS OFF
S737 A.DUB
S728 REMAIN
S716 COUNTER
S715 RESET MEMORY
S714 CH(–)
S713 CH(+)
S710 REC
S711 START
S712 LENGTH
RV705 REC LEVEL CONTROL
D715 S-VHS
D755 D754 BILINGUAL STEREO
D707 D708 D709 D706
D719 D718 D717
D726 D704 D705 D701 D703 D702
D740
D757 A.DUB
D722
DG701
IC701
IC702
IC703
0 5 0
S718 EJECT
IR701
Q704
QR701
Q701
X701
X702
ZD701
ZD702
D734
CH-1
CH-2
R748
R744
R716
C704 C705
R701
IC702
–3.5 14 1 5
0 2 –2.9
0.1 12 3 0
0 5
4.9 10 5 0
4.9 4.8
–3.5 8 7 4.8

TIMER/ OPERATION SWITCH P.C.B

※ VOLTAGE : STOP MODE. ┈ : Component Side ▨ : Solder Side ● : Through Hole

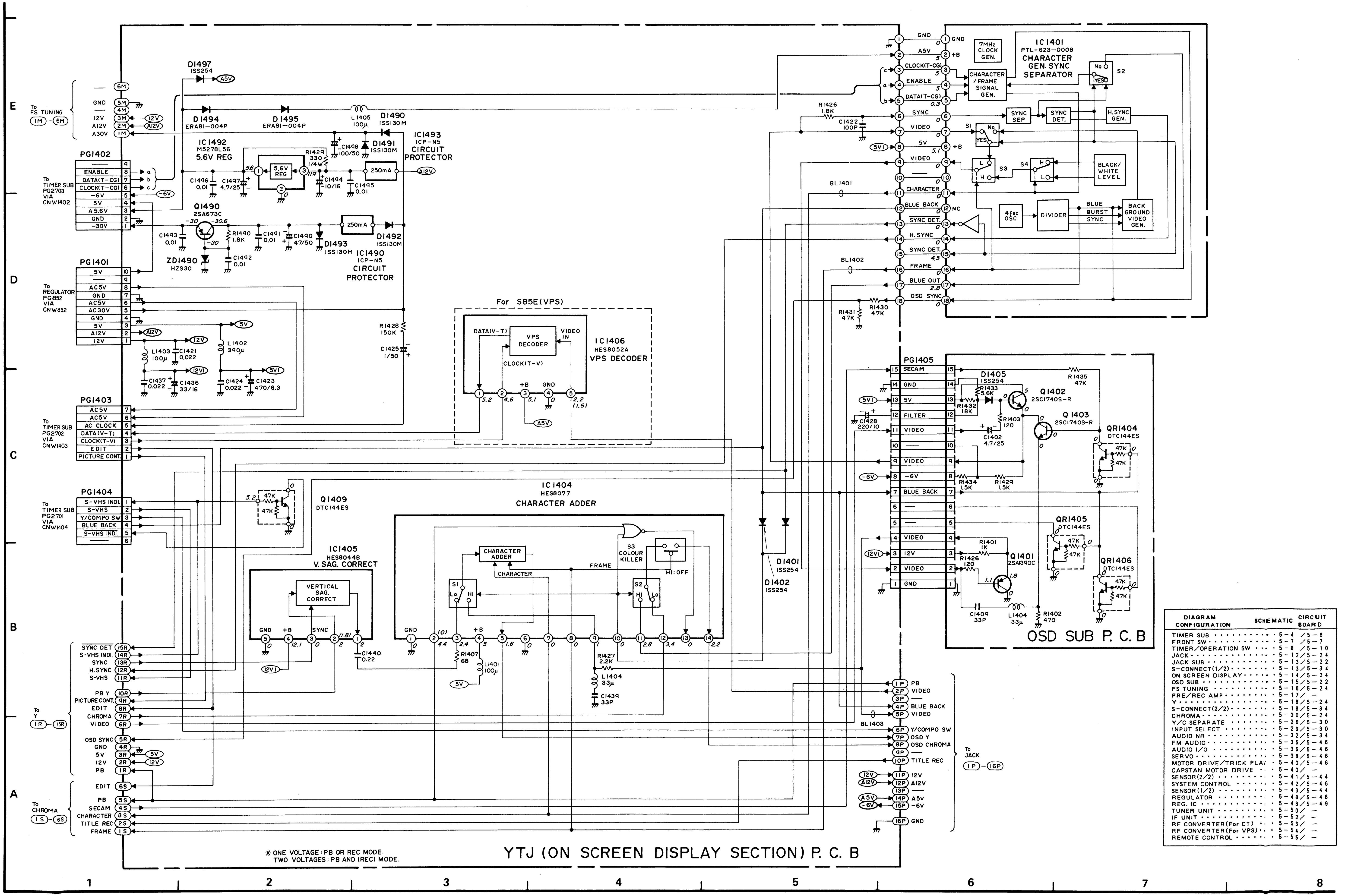
JACK/JACK SUB/S-CONNECT(1/2) SCHEMATIC DIAGRAM (BUCHSE/BUCHSE-HILFS/S-STECKER 1/2)



RF CON-VERTER
BST. +B
MOD. +B
AUDIO
VIDEO
GND
A12V
J1501
VIDEO OUT
VIDEO IN
R1523 68
C1519 470/10
C1517 0.022
C1516 47/16
L1502 100μ
12V
L1504 100μ
C1528 0.022
C1518 10/16
R1520 2.2K
Q1504 2SA933S/R
R1521 1K
CP1501 220nS DELAY
R1522 1K
R1516 12K
R1525 180
R1524 180
Q1503 2SA673C
R1513 22K
R1512 8.2K
C1526 22/10
IC1501 BA7604N VIDEO SELECT SW
IC1502 NJM2248S TITLE SELECT SW
S1 CLAMP
CLAMP
S2
+B
GND
C1505 47/6.3
C1506 47/6.3
R1510 82
R1511 82
C1510 22/10
C1509 22/10
C1512 0.01
C1513 0.022
C1511 47/16
C1524 10/16
C1525 10/16
D1506 1SS254
D1505 1SS254
To FS TUNING (1L)-(7L)
RF AUDIO
BUZZER
PB
A5V
GND
RESET
VIDEO
To Y (1N)-(5N)
Y/C CONT
LINE/TUNER
LINE A/V
To CHROMA (1X)
TITLE REC AND BLUE BACK
PG1504
To SSA (SYS. CON.) PG905 VIA CNW905
SIMULCAST
-6V
L1501 100μ
C1507 47/6.3
C1508 0.022
R1583 10K
D1581 1SS254
C1581 10/16
R1581 10K
Q1581 2SC1740S
R1582 2.2K
QR1581 DTC124ES
QR1504 DTA144ES
QR1503 DTC144ES
47K
BZ BZ1501
QR1501 DTA144ES
QR1502 DTC144ES
D1501 1SS254
D1502 1SS254
D1503 1SS254
R1572 220
12V
A12V
A5V
GND
To ON SCREEN DISPLAY (1P)-(16P)
BLUE BACK
Y/COMPO SW
OSD Y
OSD CHROMA
TITLE REC
IC1550 LA7016 OSD Y/VIDEO SELECT SW
Q1551 2SA673C
R1555 390
R1554 22K
C1556 470/10
R1557 68
R1556 8.2K
C1554 0.01
C1555 47/10
C1552 47/10
C1553 47/10
PG1550
VIDEO
OSD Y
12V
Y/COMP. SW
GND
OSD CHROMA
R1553 68
C1551 0.022
R1551 390
Q1550 2SA1390C
JACK SUB P.C.B
Q1506 2SA933S/R
Q1505 2SA673C
L1503 100μ
C1522 0.022
R1529 1K
C1520 0.022
R1526 68
C1523 47/16
C1527 0.1
R1528 470
C1521 470/10
R1527 68
PG1503
Y
CHROMA
PG1251
JK1251 Y/C OUTPUT CONNECTOR
S-CONNECTOR P.C.B(1/2)
R1530 120
J1502 EURO CONECTOR
VIDEO IN
VIDEO OUT
OSD CHROMA
AUDIO IN(L)
AUDIO OUT(L)
AUDIO IN(R)
AUDIO OUT(R)
R1507 680
R1505 100K
C1503 1000P
R1503 3.9K
R1501 8.2K
C1501 1000P
R1504 3.9K
R1502 8.2K
C1502 1000P
R1508 680
R1506 100K
C1504 1000P
PG1501
EURO(AUDIO L)
EURO(AUDIO R)
To SSA (AUDIO I/O) CN513
S1502 BUZZER ON ↔ OFF
PG1502
PRESET
REMOTE 1
REMOTE 2
To TIMER SUB PG2705 VIA CNW1502
YTJ (JACK SECTION) P.C.B
E
D
C
B
A
1
2
3
4
5
6
7
8

※ ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

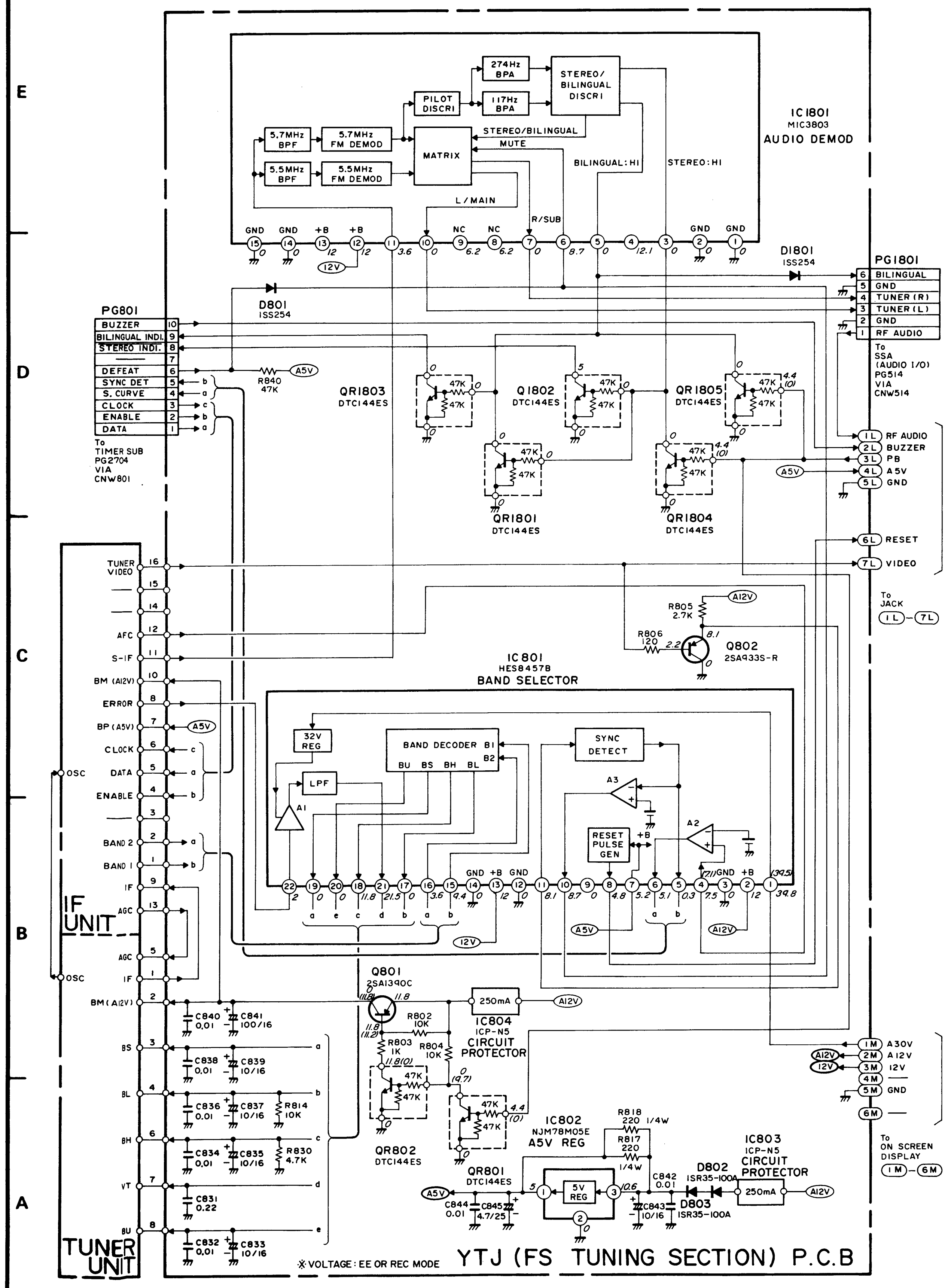
ON SCREEN DISPLAY/OSD SUB SCHEMATIC DIAGRAM (BILDSCHIRMA-ANZEIGE(OSD)/OSD-HILFS)


YTJ (ON SCREEN DISPLAY SECTION) P. C. B
OSD SUB P. C. B
IC1401
PTL-623-0008
CHARACTER GEN. SYNC SEPARATOR
7MHz CLOCK GEN.
CHARACTER /FRAME SIGNAL GEN.
SYNC SEP
SYNC DET.
H.SYNC GEN.
BLACK/WHITE LEVEL
4fsc OSC
DIVIDER
BACK GROUND VIDEO GEN.
IC1492
M5278L56
5.6V REG
IC1493
ICP-N5
CIRCUIT PROTECTOR
IC1490
ICP-N5
CIRCUIT PROTECTOR
Q1490
2SA673C
ZD1490
HZS30
D1497
1SS254
D1494
ERA81-004P
D1495
ERA81-004P
L1405
100μ
D1490
1SS130M
D1491
1SS130M
D1492
1SS130M
D1493
1SS130M
For S85E(VPS)
IC1406
HES8052A
VPS DECODER
IC1404
HES8077
CHARACTER ADDER
IC1405
HES8044B
V. SAG. CORRECT
VERTICAL SAG. CORRECT
S3 COLOUR KILLER
HI: OFF
Q1409
DTC144ES
PG1401
PG1402
PG1403
PG1404
PG1405
To FS TUNING (1M)-(6M)
To TIMER SUB PG2703 VIA CNW1402
To REGULATOR PG852 VIA CNW852
To TIMER SUB PG2702 VIA CNW1403
To TIMER SUB PG2701 VIA CNW1404
To Y (1R)-(15R)
To CHROMA (1S)-(6S)
To JACK (1P)-(16P)
D1405
1SS254
Q1402
2SC1740S-R
Q1403
2SC1740S-R
Q1401
2SA1390C
QR1404
DTC144ES
QR1405
DTC144ES
QR1406
DTC144ES
D1401
1SS254
D1402
1SS254
BL1401
BL1402
BL1403

※ ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

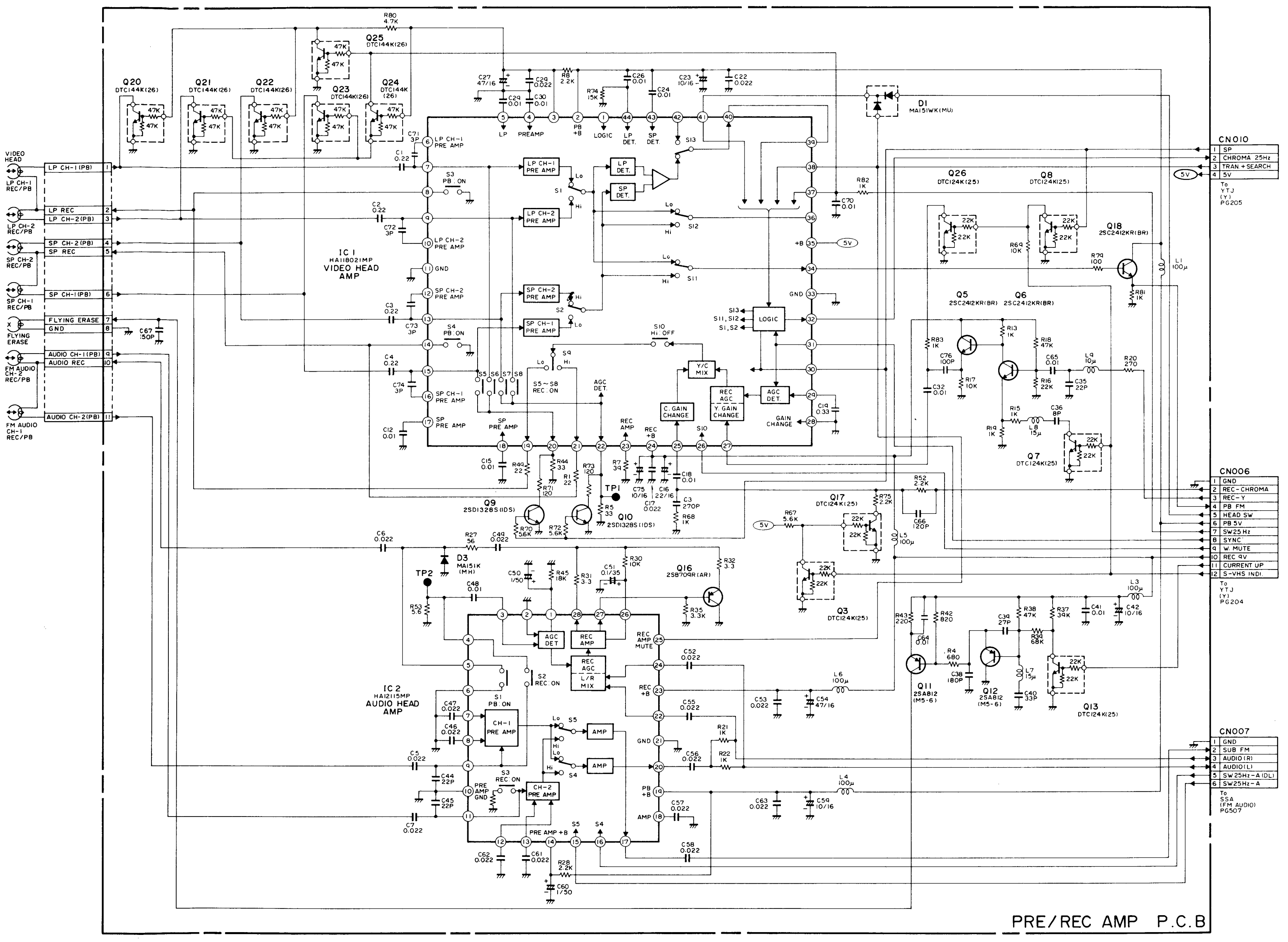
DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5-4	5-6
FRONT SW	5-7	5-7
TIMER/OPERATION SW	5-8	5-10
JACK	5-12	5-24
JACK SUB	5-13	5-22
S-CONNECT(1/2)	5-13	5-34
ON SCREEN DISPLAY	5-14	5-24
OSD SUB	5-15	5-22
FS TUNING	5-16	5-24
PRE/REC AMP	5-17	—
Y	5-18	5-24
S-CONNECT(2/2)	5-18	5-34
CHROMA	5-20	5-24
Y/C SEPARATE	5-26	5-30
INPUT SELECT	5-29	5-30
AUDIO NR	5-32	5-34
FM AUDIO	5-35	5-46
AUDIO I/O	5-36	5-46
SERVO	5-38	5-46
MOTOR DRIVE/TRICK PLAY	5-40	5-46
CAPSTAN MOTOR DRIVE	5-40	—
SENSOR(2/2)	5-41	5-44
SYSTEM CONTROL	5-42	5-46
SENSOR(1/2)	5-43	5-44
REGULATOR	5-48	5-48
REG. IC	5-48	5-49
TUNER UNIT	5-50	—
IF UNIT	5-52	—
RF CONVERTER(For CT)	5-53	—
RF CONVERTER(For VPS)	5-54	—
REMOTE CONTROL	5-55	—

FS TUNING SCHEMATIC DIAGRAM
(FREQUENZ-SYNTHESIZER-TUNER)



IC1801 MIC3803 AUDIO DEMOD
5.7MHz BPF
5.7MHz FM DEMOD
5.5MHz BPF
5.5MHz FM DEMOD
MATRIX
PILOT DISCRI
274Hz BPA
117Hz BPA
STEREO/BILINGUAL DISCRI
STEREO/BILINGUAL
MUTE
L/MAIN
R/SUB
BILINGUAL: HI
STEREO: HI
D1801 ISS254
D801 ISS254
PG801
BUZZER
BILINGUAL INDI
STEREO INDI
DEFEAT
SYNC DET
S. CURVE
CLOCK
ENABLE
DATA
To TIMER SUB PG2704 VIA CNW801
R840 47K
PG1801
BILINGUAL
GND
TUNER (R)
TUNER (L)
GND
RF AUDIO
To SSA (AUDIO I/O) PG514 VIA CNW514
QR1803 DTC144ES
Q1802 DTC144ES
QR1805 DTC144ES
QR1801 DTC144ES
QR1804 DTC144ES
RF AUDIO
BUZZER
PB
A5V
GND
RESET
VIDEO
To JACK 1L - 7L
R805 2.7K
R806 120
Q802 2SA933S-R
IC801 HE584578 BAND SELECTOR
32V REG
LPF
A1
BAND DECODER
SYNC DETECT
A3
A2
RESET PULSE GEN
TUNER VIDEO
AFC
S-IF
BM (A12V)
ERROR
BP (A5V)
CLOCK
DATA
ENABLE
BAND 2
BAND 1
OSC
IF UNIT
AGC
IF
TUNER UNIT
BS
BL
BH
VT
BU
C840 0.01
C841 100/16
C838 0.01
C839 10/16
C836 0.01
C837 10/16
R814 10K
C834 0.01
C835 10/16
R830 4.7K
C831 0.22
C832 0.01
C833 10/16
Q801 2SA1390C
R802 10K
R803 1K
R804 10K
250mA
IC804 ICP-N5 CIRCUIT PROTECTOR
QR802 DTC144ES
QR801 DTC144ES
IC802 NJM78M05E A5V REG
R818 220 1/4W
R817 220 1/4W
5V REG
C844 0.01
C845 4.7/25
C842 0.01
C843 10/16
D802 ISR35-100A
D803 ISR35-100A
IC803 ICP-N5 CIRCUIT PROTECTOR
A30V
A12V
12V
GND
To ON SCREEN DISPLAY 1M - 6M
※VOLTAGE: EE OR REC MODE
YTJ (FS TUNING SECTION) P.C.B
E
D
C
B
A

PRE/REC AMP SCHEMATIC DIAGRAM
(AUFNAHME-VORVERSTÄRKER)

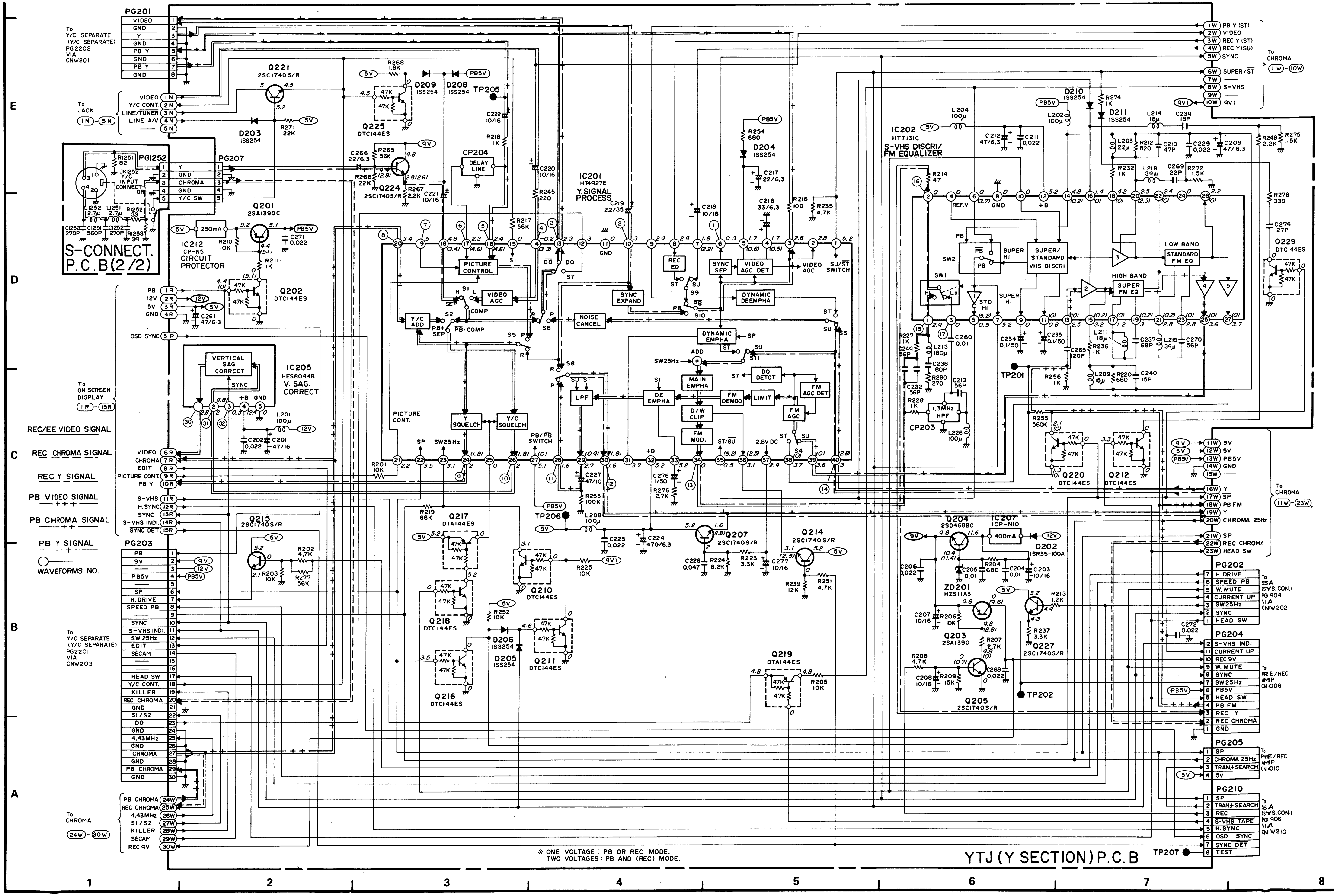


VIDEO HEAD
LP CH-1 REC/PB
LP CH-2 REC/PB
SP CH-2 REC/PB
SP CH-1 REC/PB
FLYING ERASE
FM AUDIO CH-2 REC/PB
FM AUDIO CH-1 REC/PB
Q20 DTC144K(26)
Q21 DTC144K(26)
Q22 DTC144K(26)
Q23 DTC144K(26)
Q24 DTC144K(26)
Q25 DTC144K(26)
IC1 HA11802IMP VIDEO HEAD AMP
LP CH-1 PRE AMP
LP CH-2 PRE AMP
SP CH-1 PRE AMP
SP CH-2 PRE AMP
LP DET.
SP DET.
LOGIC
Y/C MIX
C GAIN CHANGE
REC AGC Y GAIN CHANGE
AGC DET
D1 MA151WK(MU)
CN010
SP
CHROMA 25Hz
TRAN + SEARCH
5V
To YTJ (Y) PG205
Q26 DTC124K(25)
Q8 DTC124K(25)
Q18 2SC2412K(BR)
Q5 2SC2412K(BR)
Q6 2SC2412K(BR)
Q7 DTC124K(25)
CN006
GND
REC-CHROMA
REC-Y
PB FM
HEAD SW
PB 5V
SW25Hz
SYNC
W MUTE
REC RV
CURRENT UP
SW-VHS INDI
To YTJ (Y) PG204
Q9 2SD1328S(DS)
Q10 2SD1328S(DS)
TP1
TP2
D3 MA151K(MH)
Q16 2SB709R(AR)
Q17 DTC124K(25)
Q3 DTC124K(25)
IC2 HA12115MP AUDIO HEAD AMP
AGC DET
REC AMP
REC AGC
L/R MIX
REC AMP MUTE
CH-1 PRE AMP
CH-2 PRE AMP
AMP
Q11 2SA812(M5-6)
Q12 2SA812(M5-6)
Q13 DTC124K(25)
CN007
GND
SUB FM
AUDIO(R)
AUDIO(L)
SW 25Hz-A(DL)
SW25Hz-A
To SSA (FM AUDIO) PG507
PRE/REC AMP P.C.B

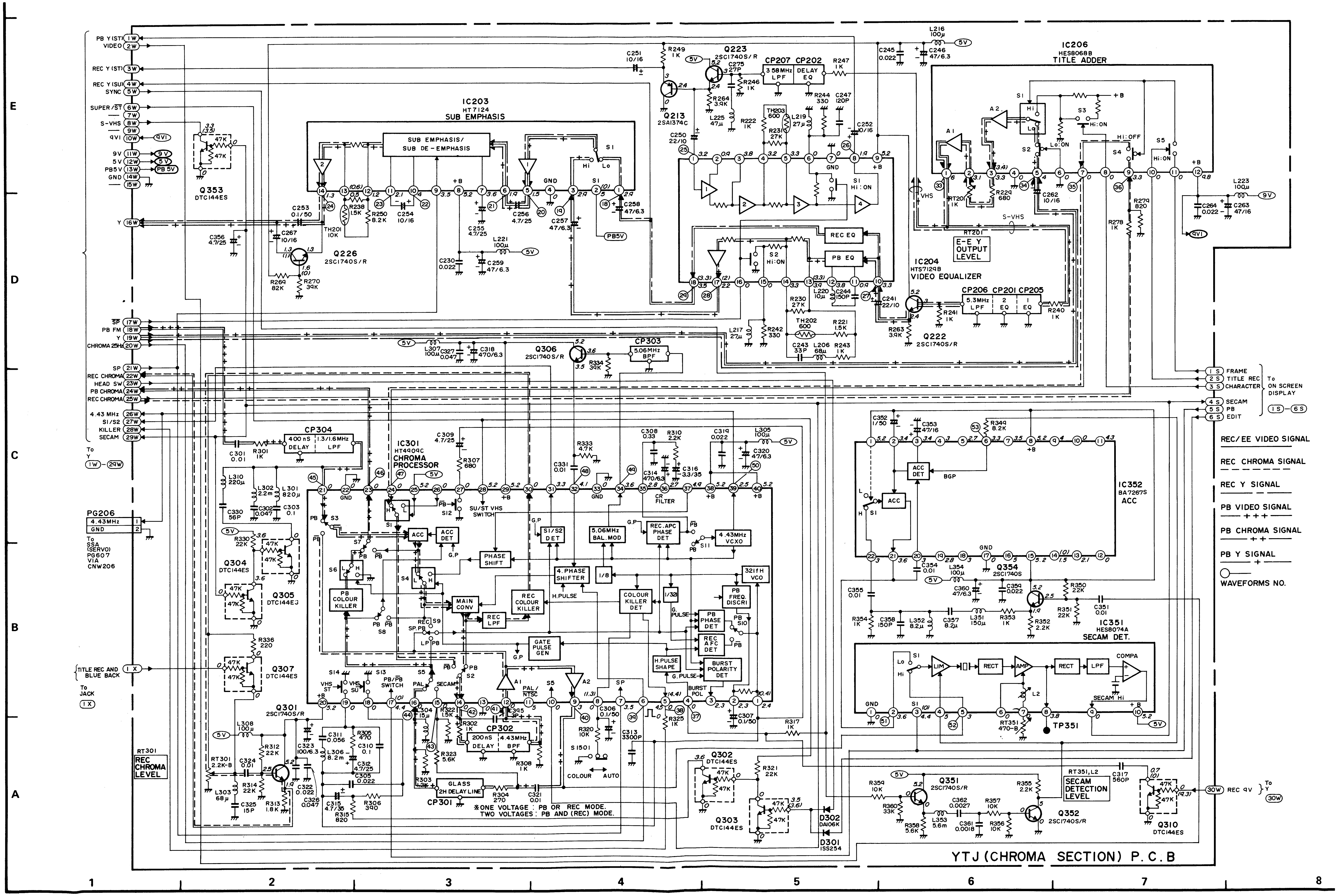
DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5-4	/5-6
FRONT SW	5-7	/5-7
TIMER/OPERATION SW	5-8	/5-10
JACK	5-12	/5-24
JACK SUB	5-13	/5-22
S-CONNECT(1/2)	5-13	/5-34
ON SCREEN DISPLAY	5-14	/5-24
OSD SUB	5-15	/5-22
FS TUNING	5-16	/5-24
PRE/REC AMP	5-17	/5-34
Y	5-18	/5-24
S-CONNECT(2/2)	5-18	/
CHROMA	5-20	/5-24
Y/C SEPARATE	5-26	/5-30
INPUT SELECT	5-29	/5-30
AUDIO NR	5-32	/5-34
FM AUDIO	5-35	/5-46
AUDIO I/O	5-36	/5-46
SERVO	5-38	/5-46
MOTOR DRIVE/TRICK PLAY	5-40	/5-46
CAPSTAN MOTOR DRIVE	5-40	/ -
SENSOR(2/2)	5-41	/5-44
SYSTEM CONTROL	5-42	/5-46
SENSOR(1/2)	5-43	/5-44
REGULATOR	5-48	/5-48
REG. IC	5-48	/5-49
TUNER UNIT	5-50	/ -
IF UNIT	5-52	/ -
RF CONVERTER(For CT)	5-53	/ -
RF CONVERTER(For VPS)	5-54	/ -
REMOTE CONTROL	5-55	/ -

1 2 3 4 5 6 7 8

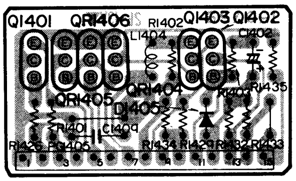
Y/S-CONNECT(2/2) SCHEMATIC DIAGRAM (LUMINANZ/S-STECKER 2/2)


PG201
VIDEO
GND
Y
GND
PB Y
GND
PB Y
GND
To Y/C SEPARATE (Y/C SEPARATE) PG2202 VIA CNW201
To JACK (1N)-(5N)
VIDEO
Y/C CONT.
LINE/TUNER
LINE A/V
S-CONNECT. P.C.B(2/2)
PG1252
JK1252 Y/C INPUT CONNECTOR
PG207
Y
GND
CHROMA
GND
Y/C SW
Q221 2SC1740S/R
D203 1SS254
R271 22K
Q225 DTC144ES
D209 1SS254
D208 1SS254
TP205
Q224 2SC1740S/R
CP204 DELAY LINE
IC201 HT4927E Y.SIGNAL PROCESS
Q201 2SA1390C
IC212 ICP-N5 CIRCUIT PROTECTOR
250mA
Q202 DTC144ES
PB
12V
5V
GND
OSD SYNC
To ON SCREEN DISPLAY (1R)-(15R)
VERTICAL SAG CORRECT
SYNC
IC205 HES8044B V. SAG. CORRECT
PICTURE CONTROL
VIDEO AGC
Y/C ADD
PB+SEP
PB·COMP
SYNC EXPAND
NOISE CANCEL
REC EQ
SYNC SEP
VIDEO AGC DET
VIDEO AGC
SU/ST SWITCH
DYNAMIC DEEMPHA
DYNAMIC EMPHA
MAIN EMPHA
DO DETCT
FM AGC DET
DE EMPHA
FM DEMOD
LIMIT
FM AGC
LPF
D/W CLIP
FM MOD.
Y SQUELCH
Y/C SQUELCH
PICTURE CONT.
SP
SW25Hz
PB/PB SWITCH
2.8V DC
ST/SU
REC/EE VIDEO SIGNAL
REC CHROMA SIGNAL
REC Y SIGNAL
PB VIDEO SIGNAL
PB CHROMA SIGNAL
PB Y SIGNAL
WAVEFORMS NO.
VIDEO
CHROMA
EDIT
PICTURE CONT.
PB Y
S-VHS
H.SYNC
SYNC
S-VHS INDI.
SYNC DET
PG203
PB
9V
PB5V
SP
H.DRIVE
SPEED PB
SYNC
S-VHS INDI.
SW 25Hz
EDIT
SECAM
HEAD SW
Y/C CONT.
KILLER
REC CHROMA
GND
S1/S2
DO
4.43MHz
CHROMA
PB CHROMA
To Y/C SEPARATE (Y/C SEPARATE) PG2201 VIA CNW203
To CHROMA (24W)-(30W)
PB CHROMA
REC CHROMA
4.43MHz
S1/S2
KILLER
SECAM
REC 9V
Q215 2SC1740S/R
Q217 DTA144ES
Q218 DTC144ES
Q216 DTC144ES
Q210 DTC144ES
Q211 DTC144ES
D206 1SS254
D205 1SS254
TP206
Q207 2SC1740S/R
Q214 2SC1740S/R
Q219 DTA144ES
※ ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.
IC202 HT7131C S-VHS DISCRI/FM EQUALIZER
SUPER HI
SUPER/STANDARD VHS DISCRI
STANDARD FM EQ
LOW BAND
HIGH BAND
SUPER FM EQ
STD HI
REF.V
GND
CP203 1.3MHz HPF
TP201
Q229 DTC144ES
Q220 DTC144ES
Q212 DTC144ES
D210 1SS254
D211 1SS254
Q204 2SD468BC
IC207 ICP-N10
400mA
D202 1SR35-100A
ZD201 HZS11A3
Q203 2SA1390
Q227 2SC1740S/R
Q205 2SC1740S/R
TP202
PB Y (ST)
VIDEO
REC Y (ST)
REC Y (SU)
SYNC
SUPER/ST
S-VHS
9V1
To CHROMA (1W)-(10W)
9V
5V
PB5V
GND
Y
SP
PB FM
Y
CHROMA 25Hz
SP
REC CHROMA
HEAD SW
To CHROMA (11W)-(23W)
PG202
H. DRIVE
SPEED PB
W. MUTE
CURRENT UP
SW25Hz
SYNC
HEAD SW
To SSA (SYS. CON.) PG 404 VIA CNW202
PG204
S-VHS INDI.
CURRENT UP
REC 9V
SYNC
W. MUTE
SW25Hz
PB5V
HEAD SW
PB FM
REC Y
REC CHROMA
GND
To PRE/REC AMP CN006
PG205
SP
CHROMA 25Hz
TRAN. SEARCH
5V
To PRE/REC AMP CN010
PG210
SP
TRAN. SEARCH
REC
S-VHS TAPE
H.SYNC
OSD SYNC
SYNC DET
TEST
To SSA (SYS.CON.) PG 406 VIA CNW210
TP207
YTJ (Y SECTION) P.C.B
1
2
3
4
5
6
7
8
E
D
C
B
A

CHROMA SCHEMATIC DIAGRAM (CHROMINANZ)


IC203
HT7124
SUB EMPHASIS
SUB EMPHASIS/ SUB DE-EMPHASIS
IC204
HTS7129B
VIDEO EQUALIZER
REC EQ
PB EQ
IC206
HES8068B
TITLE ADDER
E-E Y OUTPUT LEVEL
RT201
CP207 CP202
3.58MHz LPF
DELAY EQ
CP206 CP201 CP205
5.3MHz LPF
2 EQ
1 EQ
Q223 2SC1740S/R
Q213 2SA1374C
Q222 2SC1740S/R
Q226 2SC1740S/R
Q353 DTC144ES
IC301
HT4909C
CHROMA PROCESSOR
ACC
ACC DET
PHASE SHIFT
PB COLOUR KILLER
MAIN CONV
REC LPF
REC COLOUR KILLER
4 PHASE SHIFTER
5.06MHz BAL.MOD
REC.APC PHASE DET
4.43MHz VCXO
321fH VCO
1/8
1/321
COLOUR KILLER DET
PB FREQ. DISCRI
PB PHASE DET
REC AFC DET
BURST POLARITY DET
H.PULSE SHAPE
GATE PULSE GEN
S1/S2 DET
CR FILTER
SU/ST VHS SWITCH
CP304
400nS DELAY
1.3/1.6MHz LPF
CP303
5.06MHz BPF
CP302
200nS DELAY
4.43MHz BPF
CP301
GLASS 2H DELAY LINE
Q301 2SC1740S/R
Q304 DTC144ES
Q305 DTC144E3
Q306 2SC1740S/R
Q307 DTC144ES
Q302 DTC144ES
Q303 DTC144ES
D302 DA106K
D301 1SS254
S1501
COLOUR AUTO
RT301 REC CHROMA LEVEL
※ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.
IC352
BA7267S
ACC
Q354 2SC1740S
IC351
HES8074A
SECAM DET.
LIM
RECT
AMP
LPF
COMPA
TP351
Q351 2SC1740S/R
Q352 2SC1740S/R
RT351, L2
SECAM DETECTION LEVEL
Q310 DTC144ES
PG206
4.43MHz
GND
To SSA (SERVO) PG607 VIA CNW206
PB Y(ST) 1W
VIDEO 2W
REC Y(ST) 3W
REC Y(SU) 4W
SYNC 5W
SUPER/ST 6W
7W
S-VHS 8W
9W
9V1 10W
9V 11W
5V 12W
PB5V 13W
GND 14W
15W
Y 16W
SP 17W
PB FM 18W
Y 19W
CHROMA 25Hz 20W
SP 21W
REC CHROMA 22W
HEAD SW 23W
PB CHROMA 24W
REC CHROMA 25W
4.43 MHz 26W
S1/S2 27W
KILLER 28W
SECAM 29W
To Y (1W)-(29W)
TITLE REC AND BLUE BACK 1X
To JACK (1X)
1S FRAME
2S TITLE REC
3S CHARACTER
To ON SCREEN DISPLAY
4S SECAM
5S PB
6S EDIT
(1S)-(6S)
REC 9V 30W
To Y (30W)
REC/EE VIDEO SIGNAL
REC CHROMA SIGNAL
REC Y SIGNAL
PB VIDEO SIGNAL
PB CHROMA SIGNAL
PB Y SIGNAL
WAVEFORMS NO.
YTJ (CHROMA SECTION) P.C.B
E
D
C
B
A
1
2
3
4
5
6
7
8

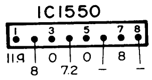
OSD SUB CIRCUIT BOARD DIAGRAM (OSD-HILFS)

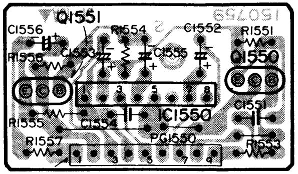


To YTJ PG1405

OSD SUB P.C.B

JACK SUB CIRCUIT BOARD DIAGRAM (BUCHSE-HILFS)





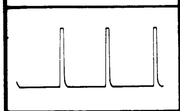
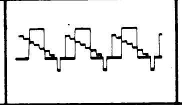
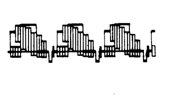
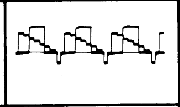
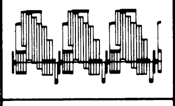
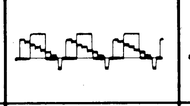
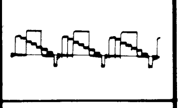
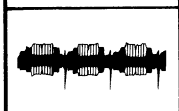
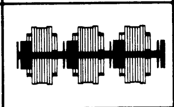
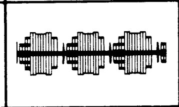
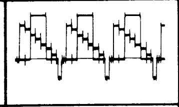
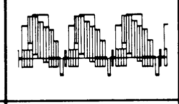
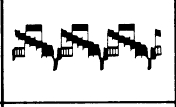
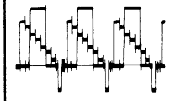
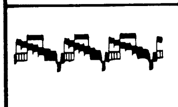
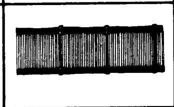
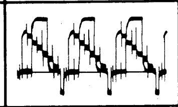
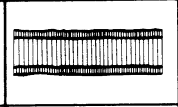
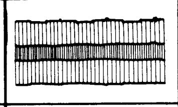
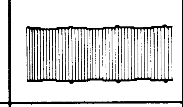
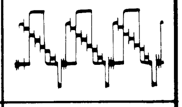
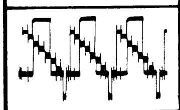
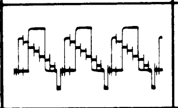
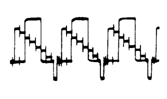
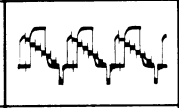
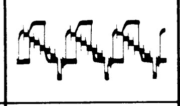
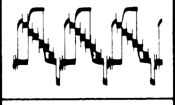
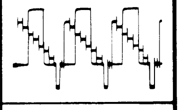
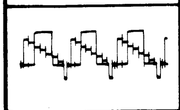
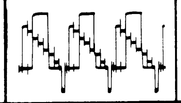
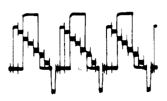
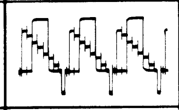
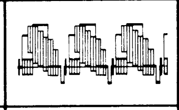
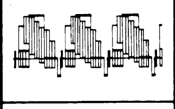
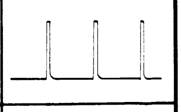
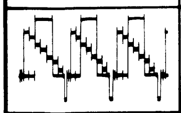
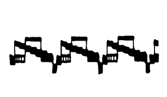
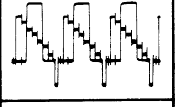
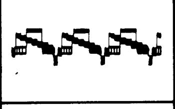
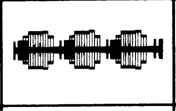
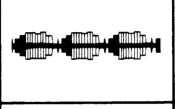
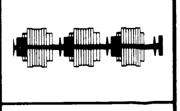
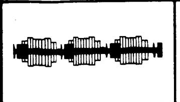
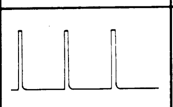
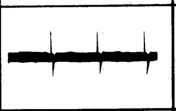
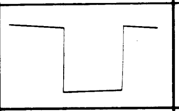
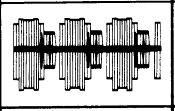
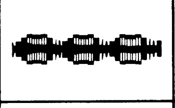
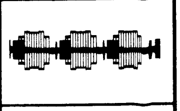
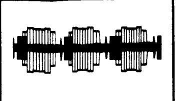
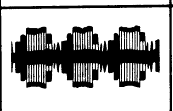
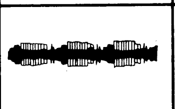
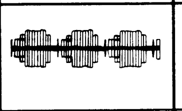
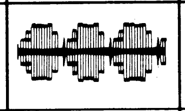
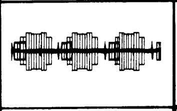
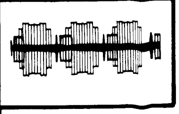
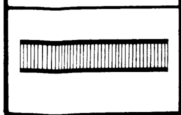
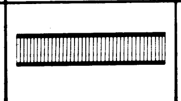
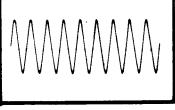
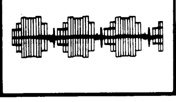
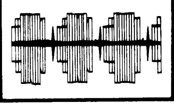
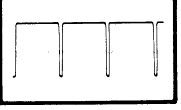
To YTJ PG1550

JACK SUB P.C.B

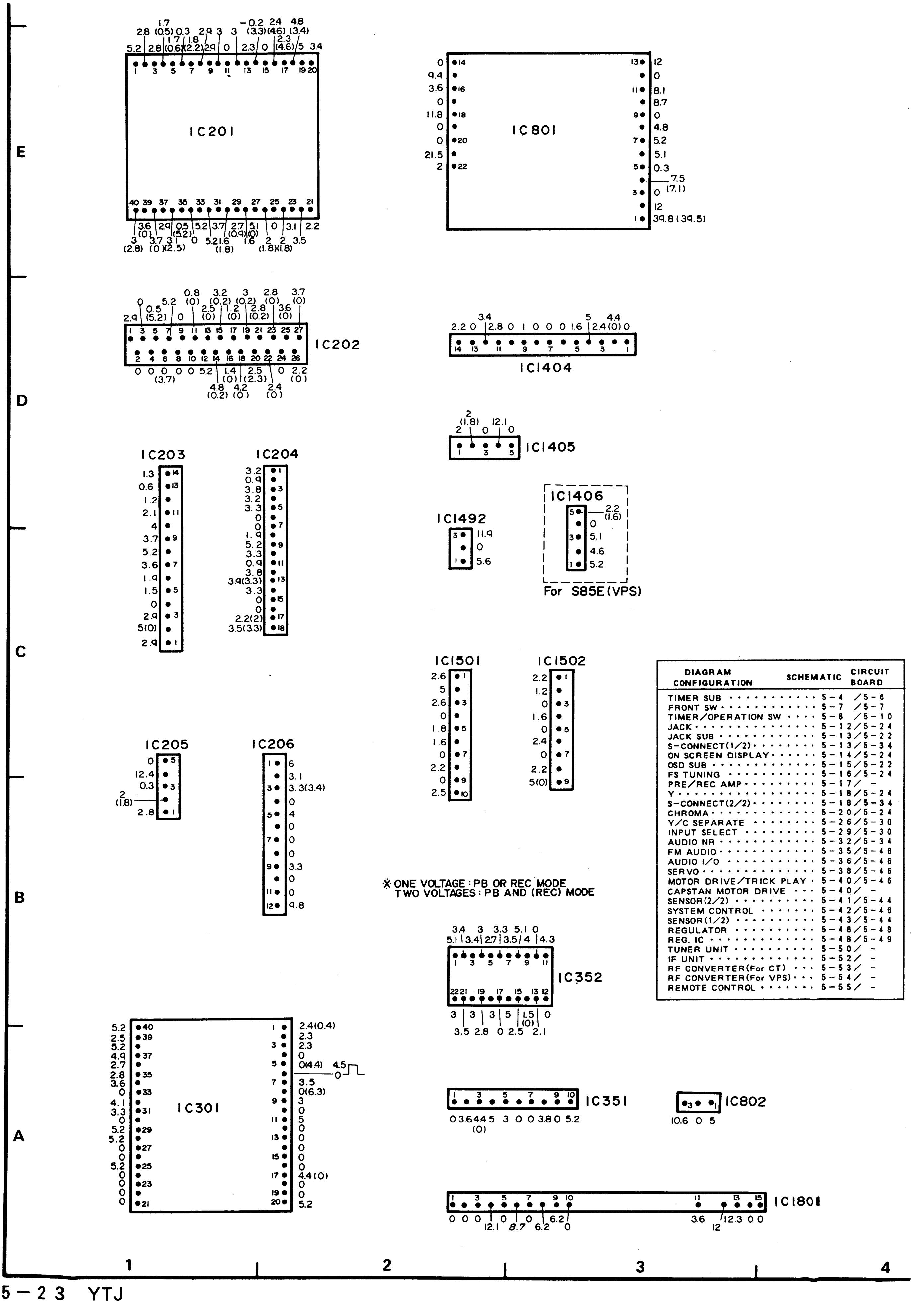
Y/CHROMA WAVEFORMS (LUMINANZ/CHROMINANZ-WELLENFORMEN)

Note:Measurement conditions are as follows.
REC:Colour bars, 1Vp-p at video input jack.
PLAY:Use alignment tape (colour bar section).

Hinweis:Die folgenden Meßbedingungen einhalten.
Aufnahme:Farbbalken, 1Vs-s an Video-Eingangsbuchse.
Wiedergabe:Abgleichband (Farbbalkenabschnitt) verwenden.

1-A IC201-6 4.0Vp-p 1V/20.0μ sec. REC/PLAY	2-A IC201-10 570mVp-p 0.2V/20.0μ sec. REC/PLAY	3-A IC201-13 520mVp-p 0.2V/20.0μ sec. REC	3-B IC201-13 520mVp-p 0.2V/20.0u sec. PLAY	4-A IC201-14 1Vp-p 0.2V/20.0μ sec. REC	5-A IC201-16 500mVp-p 0.2V/20.0μ sec. REC/PLAY	6-A IC201-17 500mVp-p 0.2V/20.0μ sec. REC/PLAY
						
7-A IC201-19 50mVp-p 20mV/20.0μ sec. REC/PLAY	8-A IC201-20 800mVp-p 0.2V/20.0μ sec. REC	8-B IC201-20 600mVp-p 0.2V/20.0μ sec. PLAY	9-A IC201-24 2.1Vp-p 0.5V/20.0μ sec. REC/PLAY	10-A IC201-26 2.0Vp-p 0.5/20.0μ sec. REC/PLAY	11-B IC201-28 600mVp-p 0.2V/20.0μ sec. PLAY	12-A IC201-30 1.1Vp-p 0.2V/20.0μ sec. REC
						
12-B IC201-30 1.2Vp-p 0.5V/20.0μ sec. PLAY	13-A IC201-34 650mVp-p 0.2V/20.0μ sec. REC	14-A IC201-40 500mVp-p 0.1V/20.0μ sec. REC/PLAY	15-A IC202-1 340mVp-p 0.1V/20.0μ sec. REC	16-A IC202-2 450mVp-p 0.1V/20.0μ sec. REC	17-A IC202-3 400mVp-p 0.1V/20.0μ sec. REC	18-A IC203-1 500mVp-p 0.1V/20.0μ sec. REC/PLAY
						
19-A IC203-3 500mVp-p 0.1V/20.0μ sec. REC/PLAY	20-A IC203-5 410mVp-p 0.1V/20.0μ sec. REC/PLAY	21-A IC203-6 410mVp-p 0.1V/20.0μ sec. REC/PLAY	22-A IC203-10 200mVp-p 50mV/20.0μ sec. REC/PLAY	23-A IC203-11 200mVp-p 50mV/20.0μ sec. REC/PLAY	24-A IC203-14 500mVp-p 0.1V/20.0μ sec. REC/PLAY	25-A IC204-1 530mVp-p 0.1V/20.0μ sec. REC/PLAY
						
26-A IC204-8 640mVp-p 0.2V/20.0μ sec. REC/PLAY	27-A IC204-10 530mVp-p 0.1V/20.0μ sec. REC/PLAY	28-A IC204-17 530mVp-p 0.1V/20.0μ sec. REC/PLAY	29-A IC204-18 530mVp-p 0.1V/20.0μ sec. REC/PLAY	30-A IC205-1 2.0Vp-p 0.5V/20.0μ sec. REC/PLAY	31-A IC205-2 2.0Vp-p 0.5V/20.0μ sec. REC/PLAY	32-A IC205-3 4.0Vp-p 1V/20.0μ sec. REC/PLAY
						
33-A IC206-1 1.1Vp-p 0.2V/20.0μ sec. REC	33-B IC206-1 1.1Vp-p 0.5V/20.0μ sec. PLAY	34-A IC206-5 1.1Vp-p 0.2V/20.0μ sec. REC	34-B IC206-5 1.1Vp-p 0.5V/20.0μ sec. PLAY	35-A IC206-7 270mVp-p 0.1V/20.0μ sec. REC	35-B IC206-7 200mVp-p 0.1V/20.0μ sec. PLAY	36-A IC206-9 270mVp-p 0.1V/20.0μ sec. REC
						
36-B IC206-9 200mVp-p 0.1V/20.0μ sec. PLAY	37-A IC301-4 4.0Vp-p 1V/20.0μ sec. REC/PLAY	38-A IC301-5 250mVp-p 50mV/20.0μ sec. REC/PLAY	39-A IC301-6 4.5Vp-p 1V/5.0m sec. REC/PLAY	40-A IC301-9 1.0Vp-p 0.2V/20.0μ sec. REC/PLAY	41-A IC301-12 110mVp-p 50mV/20.0μ sec. REC/PLAY	42-A IC301-14 270mVp-p 0.1V/20.0μ sec. REC/PLAY
						
43-A IC301-15 160mVp-p 50mV/20.0μ sec. REC/PLAY	44-A IC301-16 210mVp-p 50mV/20.0μ sec. REC/PLAY	45-B IC301-21 100mVp-p 50mV/20.0μ sec. PLAY	46-A IC301-23 270mVp-p 0.1V/20.0μ sec. REC	46-B IC301-23 400mVp-p 0.1V/20.0μ sec. PLAY	47-A IC301-24 270mVp-p 0.1V/20.0μ sec. REC	47-B IC301-24 200mVp-p 50mV/20.0μ sec. PLAY
						
48-A IC301-32 120mVp-p 50mV/20.0μ sec. REC/PLAY	49-A IC301-34 120mVp-p 50mV/20.0μ sec. REC/PLAY	50-A IC301-39 380mVp-p 0.1V/200n sec. REC/PLAY	51-A IC351-2 580mVp-p 0.2V/20.0μ sec. REC	52-A IC351-5 1Vp-p 0.2/20.0μ sec. REC/PLAY	53-A IC352-6 1.9Vp-p 0.5V/20.0μ sec. REC/PLAY	
						

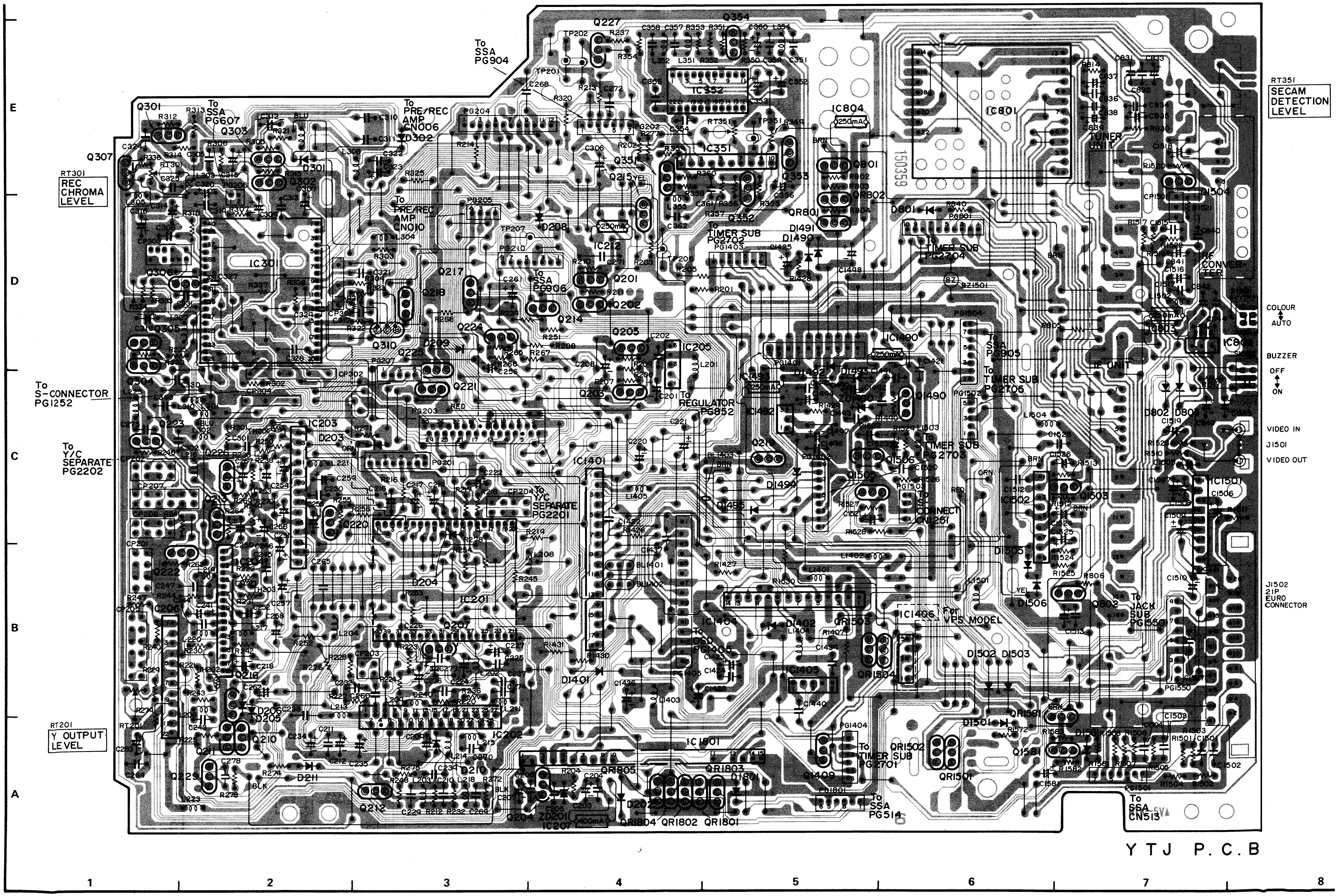
YTJ CIRCUIT BOARD DIAGRAM (YTJ)



IC201
IC801
IC202
IC1404
IC1405
IC203
IC204
IC1492
IC1406
For S85E(VPS)
IC1501
IC1502
IC205
IC206
IC352
IC301
IC351
IC802
IC1801
E
D
C
B
A
1
2
3
4

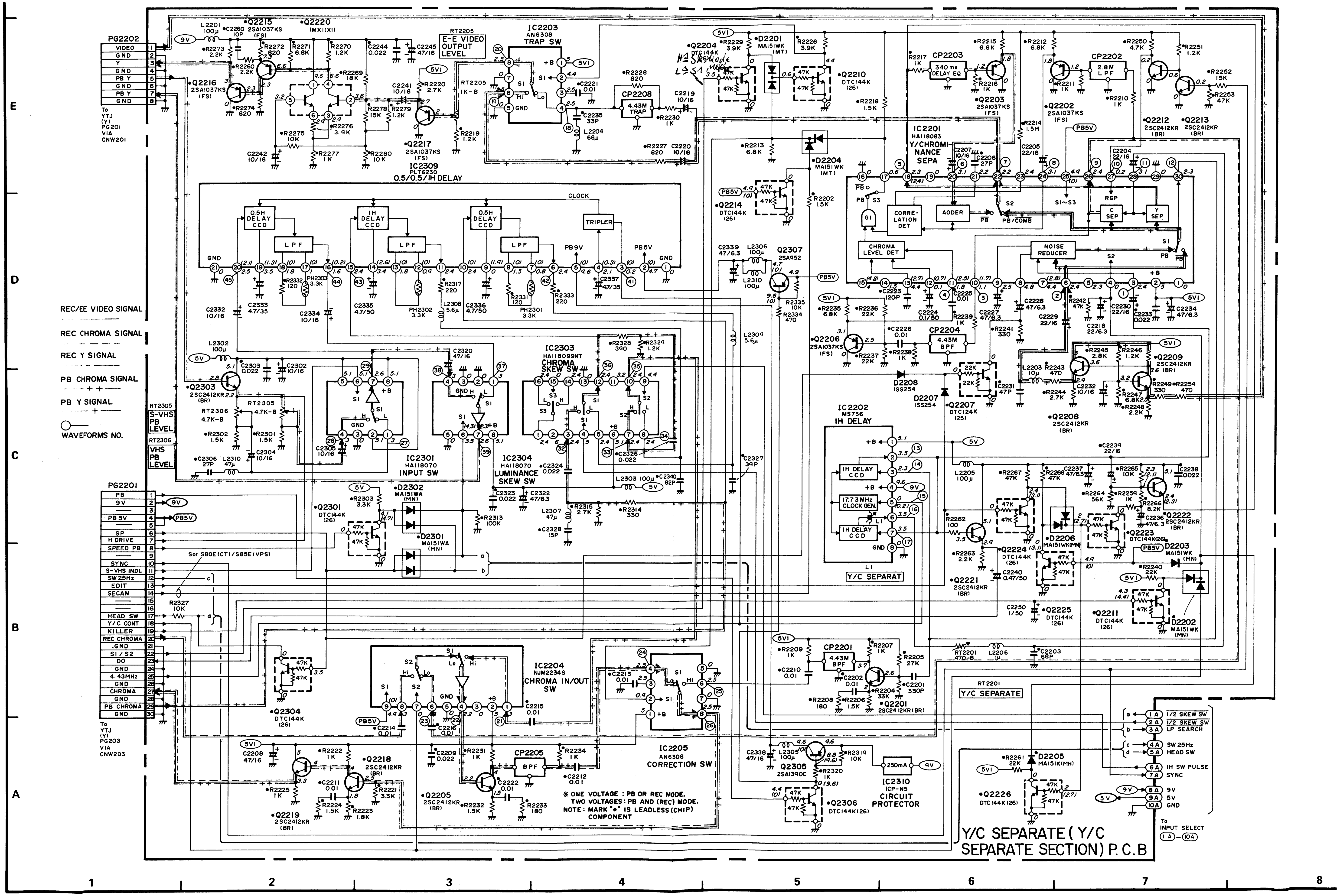
※ ONE VOLTAGE : PB OR REC MODE
TWO VOLTAGES : PB AND (REC) MODE

DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5−4	/5−6
FRONT SW	5−7	/5−7
TIMER/OPERATION SW	5−8	/5−10
JACK	5−12	/5−24
JACK SUB	5−13	/5−22
S−CONNECT(1/2)	5−13	/5−34
ON SCREEN DISPLAY	5−14	/5−24
OSD SUB	5−15	/5−22
FS TUNING	5−16	/5−24
PRE/REC AMP	5−17	/ −
Y	5−18	/5−24
S−CONNECT(2/2)	5−18	/5−34
CHROMA	5−20	/5−24
Y/C SEPARATE	5−26	/5−30
INPUT SELECT	5−29	/5−30
AUDIO NR	5−32	/5−34
FM AUDIO	5−35	/5−46
AUDIO I/O	5−36	/5−46
SERVO	5−38	/5−46
MOTOR DRIVE/TRICK PLAY	5−40	/5−46
CAPSTAN MOTOR DRIVE	5−40	/ −
SENSOR(2/2)	5−41	/5−44
SYSTEM CONTROL	5−42	/5−46
SENSOR(1/2)	5−43	/5−44
REGULATOR	5−48	/5−48
REG. IC	5−48	/5−49
TUNER UNIT	5−50	/ −
IF UNIT	5−52	/ −
RF CONVERTER(For CT)	5−53	/ −
RF CONVERTER(For VPS)	5−54	/ −
REMOTE CONTROL	5−55	/ −


E
D
C
B
A
1
2
3
4
5
6
7
8
To SSA PG904
To SSA PG607
To PRE/REC AMP CN006
To PRE/REC AMP CN010
RT301 REC CHROMA LEVEL
RT351 SECAM DETECTION LEVEL
To S-CONNECTOR PG1252
To Y/C SEPARATE PG2202
To Y/C SEPARATE PG2201
To SSA PG906
To TIMER SUB PG2702
To TIMER SUB PG2704
To TIMER SUB PG2705
To TIMER SUB PG2703
To TIMER SUB PG2701
To SSA PG905
To REGULATOR PG852
To CONNECT CN1251
To OSD PG1404
To JACK SUB PG1551
To SSA PG514
To SSA CN513
For VPS MODEL
TUNER UNIT
RF CONVERTER
IF UNIT
COLOUR AUTO
BUZZER OFF ON
VIDEO IN
J1501
VIDEO OUT
J1502 21P EURO CONNECTOR
RT201 Y OUTPUT LEVEL
IC301
IC352
IC351
IC804
IC801
IC212
IC205
IC203
IC1401
IC1490
IC1492
IC1502
IC1501
IC201
IC202
IC1406
IC1405
IC1801
IC207
250mA
400mA
150359
BLU
RED
ORN
BRN
YEL
BLK

YTJ P.C.B

Y/C SEPARATE SCHEMATIC DIAGRAM (Y/C-SEPARATOR)

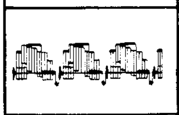
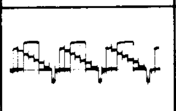
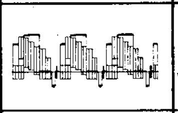
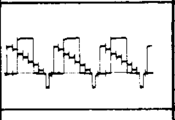
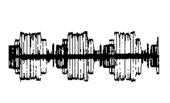
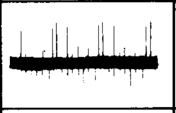
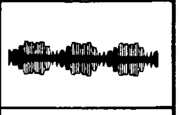
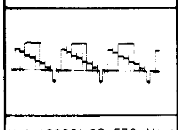
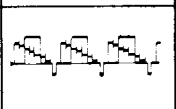
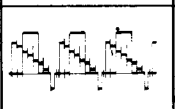
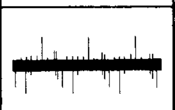
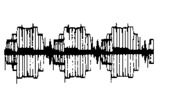
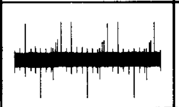
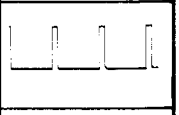
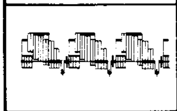
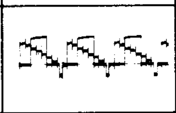
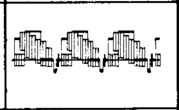
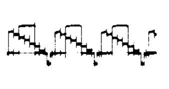
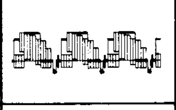
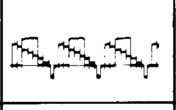
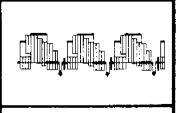
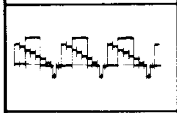
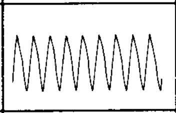
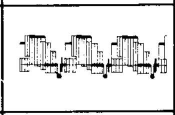
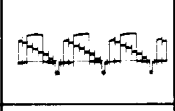
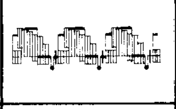
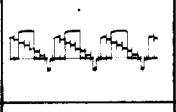
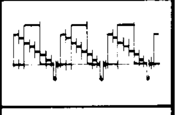
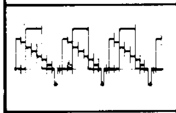
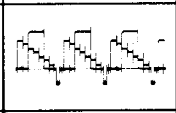
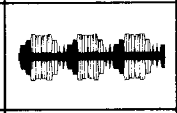
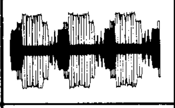
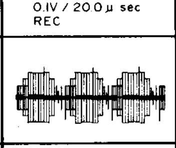
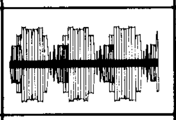
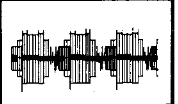
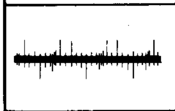
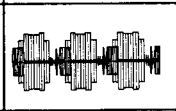
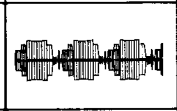
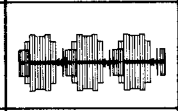
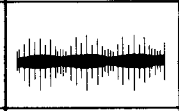
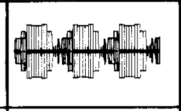
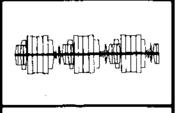
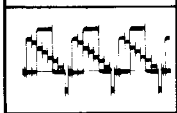
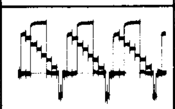
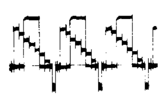
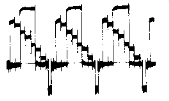
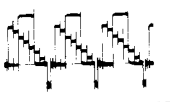
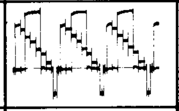
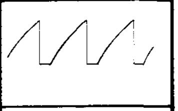
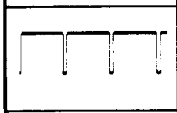
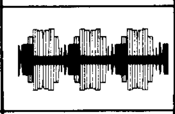
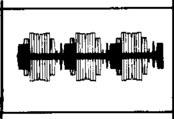
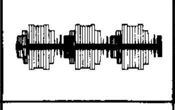
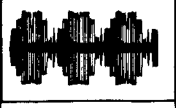
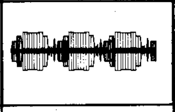
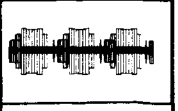
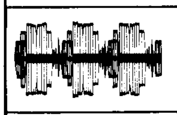
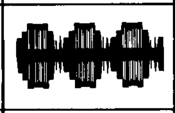
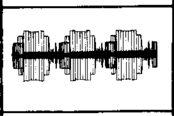
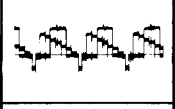
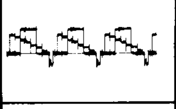
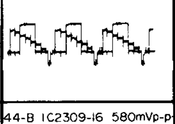
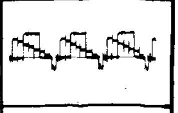
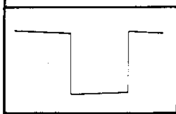
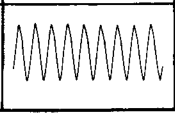
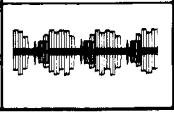
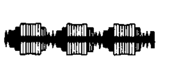
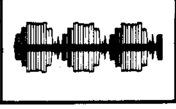
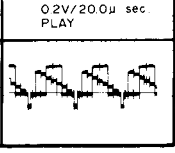
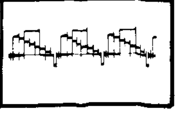


PG2202
VIDEO
GND
Y
GND
PB Y
GND
PB Y
GND
To YTJ (Y) PG201 VIA CNW201
Q2215 2SA1037KS (FS)
Q2220 IMX1(X1)
Q2216 2SA1037KS (FS)
Q2217 2SA1037KS (FS)
E-E VIDEO OUTPUT LEVEL
RT2205
IC2203 AN6308 TRAP SW
IC2309 PLT6230 0.5/0.5/1H DELAY
CP2208 4.43M TRAP
Q2204 DTC144K
D2201 MA151WK (MT)
Q2210 DTC144K (26)
D2204 MA151WK (MT)
Q2214 DTC144K (26)
IC2201 HA118083 Y/CHROMINANCE SEPA
CP2203 340ms DELAY EQ
Q2203 2SA1037KS (FS)
CP2202 2.8M LPF
Q2202 2SA1037KS (FS)
Q2212 2SC2412KR (BR)
Q2213 2SC2412KR (BR)
CORRELATION DET
ADDER
C SEP
Y SEP
CHROMA LEVEL DET
NOISE REDUCER
0.5H DELAY CCD
1H DELAY CCD
LPF
TRIPLER
CLOCK
Q2307 2SA952
REC/EE VIDEO SIGNAL
REC CHROMA SIGNAL
REC Y SIGNAL
PB CHROMA SIGNAL
PB Y SIGNAL
WAVEFORMS NO.
Q2303 2SC2412KR (BR)
RT2305 S-VHS PB LEVEL
RT2306 VHS PB LEVEL
IC2301 HA118070 INPUT SW
IC2304 HA118070 LUMINANCE SKEW SW
IC2303 HA118099NT CHROMA SKEW SW
Q2206 2SA1037KS (FS)
CP2204 4.43M BPF
D2208 1SS254
D2207 1SS254
Q2207 DTC124K (25)
Q2208 2SC2412KR (BR)
Q2209 2SC2412KR (BR)
IC2202 MS736 1H DELAY
1H DELAY CCD
17.73MHz CLOCK GEN.
Y/C SEPARAT
PG2201
PB
9V
PB 5V
SP
H DRIVE
SPEED PB
SYNC
S-VHS INDI.
SW 25Hz
EDIT
SECAM
HEAD SW
Y/C CONT.
KILLER
REC CHROMA
GND
S1/S2
DO
4.43MHz
CHROMA
PB CHROMA
To YTJ (Y) PG203 VIA CNW203
Sor S80E(CT)/S85E(VPS)
Q2301 DTC144K (26)
D2302 MA151WA (MN)
D2301 MA151WA (MN)
Q2304 DTC144K (26)
IC2204 NJM2234S CHROMA IN/OUT SW
IC2205 AN6308 CORRECTION SW
CP2205 BPF
Q2205 2SC2412KR (BR)
Q2218 2SC2412KR (BR)
Q2219 2SC2412KR (BR)
Q2221 2SC2412KR (BR)
Q2222 2SC2412KR (BR)
Q2223 DTC144K (26)
Q2224 DTC144K (26)
Q2225 DTC144K (26)
Q2211 DTC144K (26)
D2206 MA151WK (MN)
D2203 MA151WK (MN)
D2202 MA151WK (MN)
CP2201 4.43M BPF
Q2201 2SC2412KR (BR)
RT2201 Y/C SEPARATE
Q2305 2SA1340C
Q2306 DTC144K (26)
IC2310 ICP-N5 CIRCUIT PROTECTOR
D2205 MA151K (MH)
Q2226 DTC144K (26)
1/2 SKEW SW
1/2 SKEW SW
LP SEARCH
SW 25Hz
HEAD SW
1H SW PULSE
SYNC
9V
5V
GND
To INPUT SELECT (1A)-(10A)
※ ONE VOLTAGE : PB OR REC MODE. TWO VOLTAGES : PB AND (REC) MODE.
NOTE : MARK "●" IS LEADLESS (CHIP) COMPONENT
Y/C SEPARATE (Y/C SEPARATE SECTION) P.C.B
1
2
3
4
5
6
7
8
A
B
C
D
E

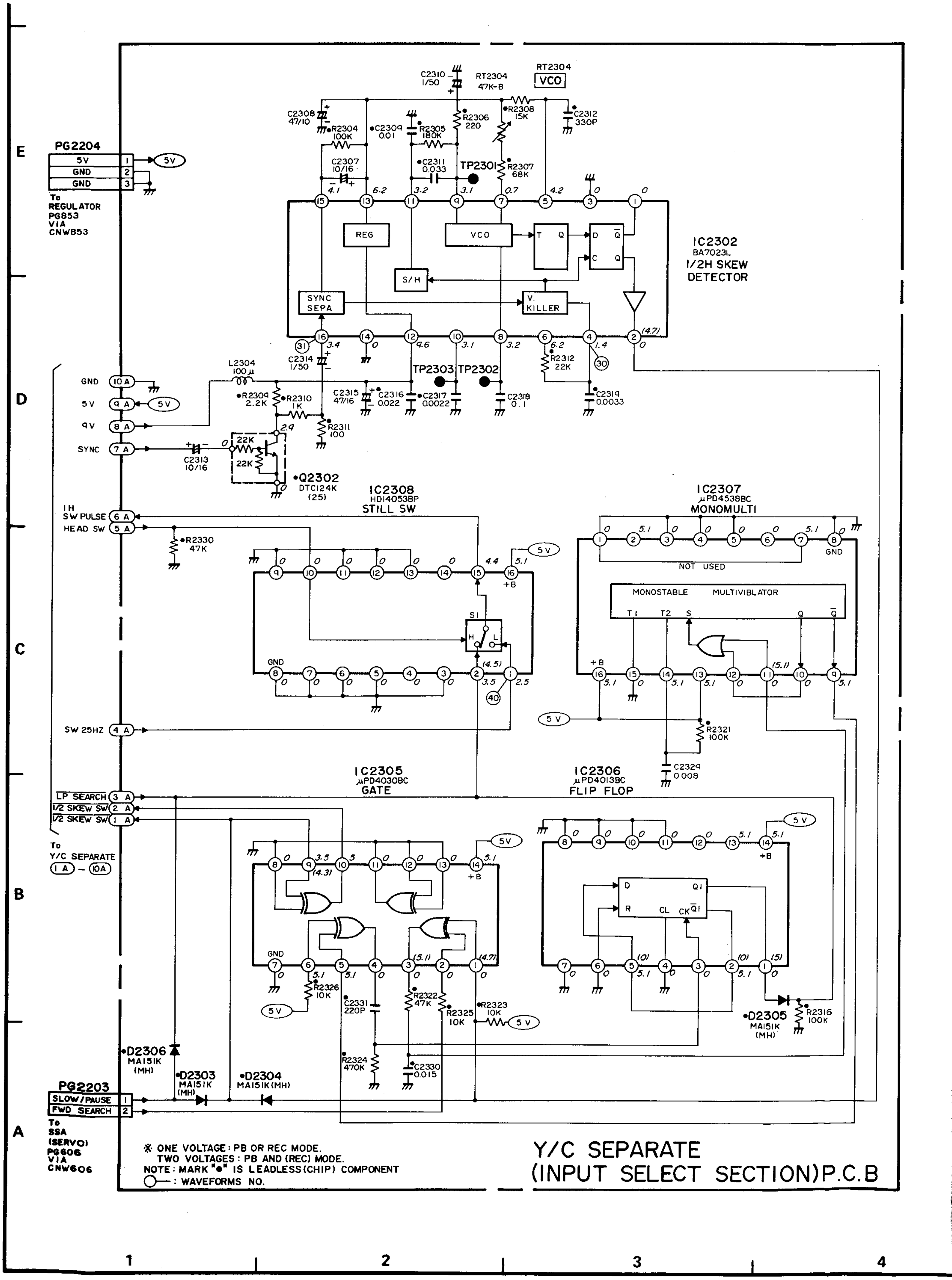
Y/C SEPARATE WAVEFORMS
(Y/C-SEPARATOR-WELLENFORMEN)

Note:Measurement conditions are as follow.
REC:Colour bars, 1Vp-p at video input jack.
PLAY:Using a S-VHS blank tape, make a SP recording and playback.

Hinweis:Die folgenden Meßbedingungen einhalten.
Aufnahme:Farbbalken, 1Vs-s an Video-Eingangsbuchse.
Wiedergabe:Eine S-VHS Leer-Kassette verwenden, eine SP-Aufnahme ausfuhren und diese wiedergeben.

1-A IC2201-3 540mVp-p 0.2V/20.0µ sec REC	1-B IC2201-3 540mVp-p 0.2V/20.0µ sec PLAY	2-A IC2201-6 700mVp-p 0.2V/20.0µ sec REC	2-B IC2201-6 700mVp-p 0.2V/20.0µ sec PLAY	3-A IC2201-10 340mVp-p 0.1V/20.0µ sec REC	3-B IC2201-10 230mVp-p 50mV/20.0µ sec PLAY	4-A IC2201-11 120mVp-p 50mV/20.0µ sec REC
						
5-A IC2201-18 520mVp-p 0.2V/20.0µ sec REC/PLAY	6-A IC2201-20 260mVp-p 0.1V/20.0µ sec REC/PLAY	7-A IC2201-22 790mVp-p 0.2V/20.0µ sec REC/PLAY	8-A IC2201-24 200mVp-p 50mV/20.0µ sec REC/PLAY	9-A IC2201-26 380mVp-p 0.1V/20.0µ sec REC	9-B IC2201-26 270mVp-p 50mV/20.0µ sec PLAY	10-A IC2201-27 1.5Vp-p 0.5V/20.0µ sec REC/PLAY
						
11-A IC2201-28 530mVp-p 0.2V/20.0µ sec REC	11-B IC2201-28 530mVp-p 0.2V/20.0µ sec PLAY	12-A IC2201-30 530mVp-p 0.2V/20.0µ sec REC	12-B IC2201-30 530mVp-p 0.2V/20.0µ sec PLAY	13-A IC2202-2 530mVp-p 0.2V/20.0µ sec REC	13-B IC2202-2 530mVp-p 0.2V/20.0µ sec PLAY	14-A IC2202-3 530mVp-p 0.2V/20.0µ sec REC
						
14-B IC2202-3 530mVp-p 0.2/20.0µ sec PLAY	15-A IC2202-5 380mVp-p 0.1V/200n sec REC/PLAY	16-A IC2202-6 570mVp-p 0.2V/20.0µ sec REC	16-B IC2202-6 540mVp-p 0.2V/20.0µ sec PLAY	17-A IC2202-7 540mVp-p 0.2V/20.0µ sec REC	17-B IC2202-7 540mVp-p 0.2V/20.0µ sec PLAY	18-A IC2203-4 740mVp-p 0.2V/20.0µ sec REC/PLAY
						
19-A IC2203-6 740mVp-p 0.2V/20.0µ sec REC/PLAY	20-A IC2203-8 740mVp-p 0.2V/20.0µ sec REC/PLAY	21-A IC2204-1 170mVp-p 50mV/20.0µ sec REC	21-B IC2204-1 260mVp-p 50mV/20.0µ sec PLAY	22-A IC2204-4 360mVp-p 0.1V/20.0µ sec REC	22-B IC2204-4 260mVp-p 50mV/20.0µ sec PLAY	23-A IC2204-6 360mVp-p 0.1V/20.0µ sec REC
						
23-B IC2204-6 280mVp-p 0.1V/20.0µ sec PLAY	24-A IC2205-4 800mVp-p 0.2V/20.0µ sec REC	24-B IC2205-4 580mVp-p 0.2V/20.0µ sec PLAY	25-A IC2205-6 800mVp-p 0.2V/20.0µ sec REC	25-B IC2205-6 260mVp-p 50mV/20.0µ sec PLAY	26-A IC2205-8 800mVp-p 0.2/20.0µ sec REC	26-B IC2205-8 560mVp-p 0.2V/20.0µ sec PLAY
						
27-A IC2301-1 200mVp-p 50mV/20.0µ sec REC	27-B IC2301-1 250mVp-p 50mV/20.0µ sec PLAY	28-A IC2301-4 250mVp-p 50mV/20.0µ sec REC	28-B IC2301-4 280mVp-p 50mV/20.0µ sec PLAY	29-A IC2301-7 470mVp-p 0.1V/20.0µ sec REC	29-B IC2301-7 550mVp-p 0.1V/20.0µ sec PLAY	30-A IC2302-4 3.0Vp-p 1V/20.0µ sec REC/PLAY
						
31-A IC2302-16 300mVp-p 0.1V/20.0µ sec REC/PLAY	32-A IC2303-3 220mVp-p 50mV/20.0µ sec REC	32-B IC2303-3 350mVp-p 0.1V/20.0µ sec PLAY	33-A IC2303-7 160mVp-p 50mV/20.0µ sec REC	33-B IC2303-7 260mVp-p 50mV/20.0µ sec PLAY	34-B IC2303-8 280mVp-p 0.1V/20.0µ sec PLAY	35-A IC2303-10 160mVp-p 50mV/20.0µ sec. REC
						
35-B IC2303-10 260mVp-p 50mV/20.0µ sec. PLAY	36-A IC2303-12 220mVp-p 50mV/20.0µ sec REC	36-B IC2303-12 360mVp-p 0.1V/20.0µ sec PLAY	37-B IC2304-1 600mVp-p 0.2V/20.0µ sec PLAY	38-A IC2304-4 480mVp-p 0.2V/20.0µ sec REC	38-B IC2304-4 560mVp-p 0.2V/20.0µ sec PLAY	39-A IC2304-7 560mVp-p 0.2V/20.0µ sec. REC/PLAY
						
40-A IC2308-1 4.3Vp-p 1V/5.0m sec REC/PLAY	41-A IC2309-3 380mVp-p 0.1V/200n sec REC/PLAY	42-B IC2309-6 340mVp-p 0.1V/20.0µ sec PLAY	43-A IC2309-15 220mVp-p 0.1V/20.0µ sec REC	43-B IC2309-15 360mVp-p 0.1V/20.0µ sec PLAY	44-B IC2309-16 580mVp-p 0.2V/20.0µ sec PLAY	45-A IC2309-20 480mVp-p 0.2V/20.0µ sec REC/PLAY
						

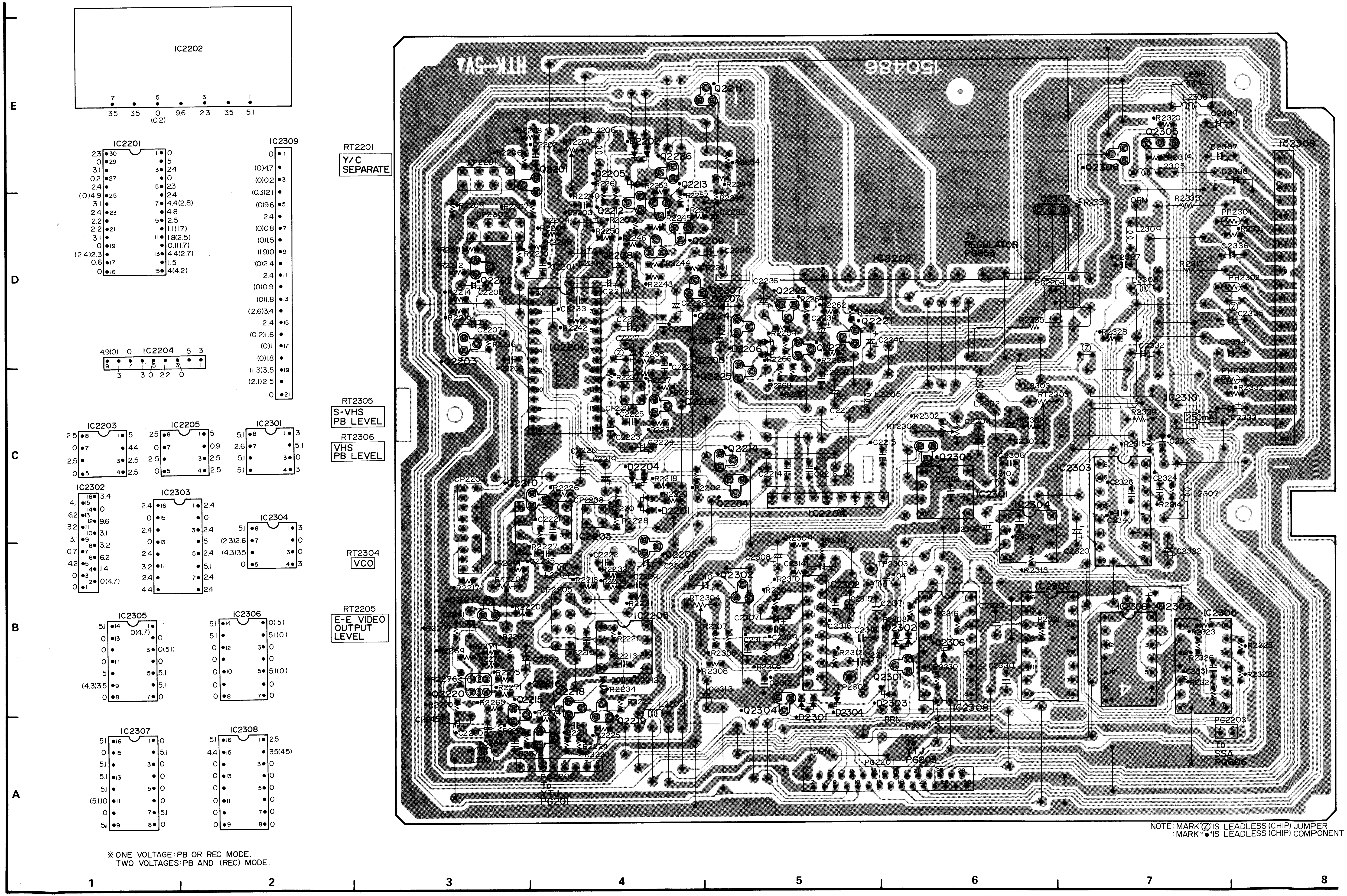
INPUT SELECT SCHEMATIC DIAGRAM (EINGANGSSCHALTER)


E
D
C
B
A
1
2
3
4
PG2204
5V
GND
GND
To REGULATOR PG853 VIA CNW853
5V
C2310 1/50
RT2304 47K-B
RT2304
VCO
C2308 47/10
R2304 100K
C2309 0.01
R2305 180K
R2306 220
R2308 15K
C2312 330P
C2307 10/16
C2311 0.033
TP2301
R2307 68K
REG
VCO
S/H
SYNC SEPA
V. KILLER
IC2302
BA7023L
1/2H SKEW DETECTOR
L2304 100µ
C2314 1/50
R2309 2.2K
R2310 1K
C2315 47/16
C2316 0.022
C2317 0.0022
TP2303
TP2302
C2318 0.1
R2312 22K
C2319 0.0033
R2311 100
GND
5V
9V
SYNC
10A
9A
8A
7A
C2313 10/16
22K
22K
Q2302
DTC124K
(25)
(30)
(31)
1H SW PULSE
HEAD SW
6A
5A
R2330 47K
IC2308
HD14053BP
STILL SW
S1
H
L
+B
GND
(40)
SW 25HZ
4A
IC2307
µPD4538BC
MONOMULTI
NOT USED
MONOSTABLE MULTIVIBLATOR
T1
T2
S
Q
Q̄
R2321 100K
C2329 0.008
IC2305
µPD4030BC
GATE
IC2306
µPD4013BC
FLIP FLOP
LP SEARCH
1/2 SKEW SW
1/2 SKEW SW
3A
2A
1A
To Y/C SEPARATE (1A) ~ (10A)
D
R
Q1
CL
CK
Q̄1
R2326 10K
C2331 220P
R2322 47K
R2325 10K
R2323 10K
R2324 470K
C2330 0.015
D2305 MA151K (MH)
R2316 100K
D2306 MA151K (MH)
D2303 MA151K (MH)
D2304 MA151K(MH)
PG2203
SLOW/PAUSE
FWD SEARCH
To SSA (SERVO) PG606 VIA CNW606

※ ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODE.
NOTE: MARK "•" IS LEADLESS (CHIP) COMPONENT
◯—: WAVEFORMS NO.

Y/C SEPARATE
(INPUT SELECT SECTION)P.C.B

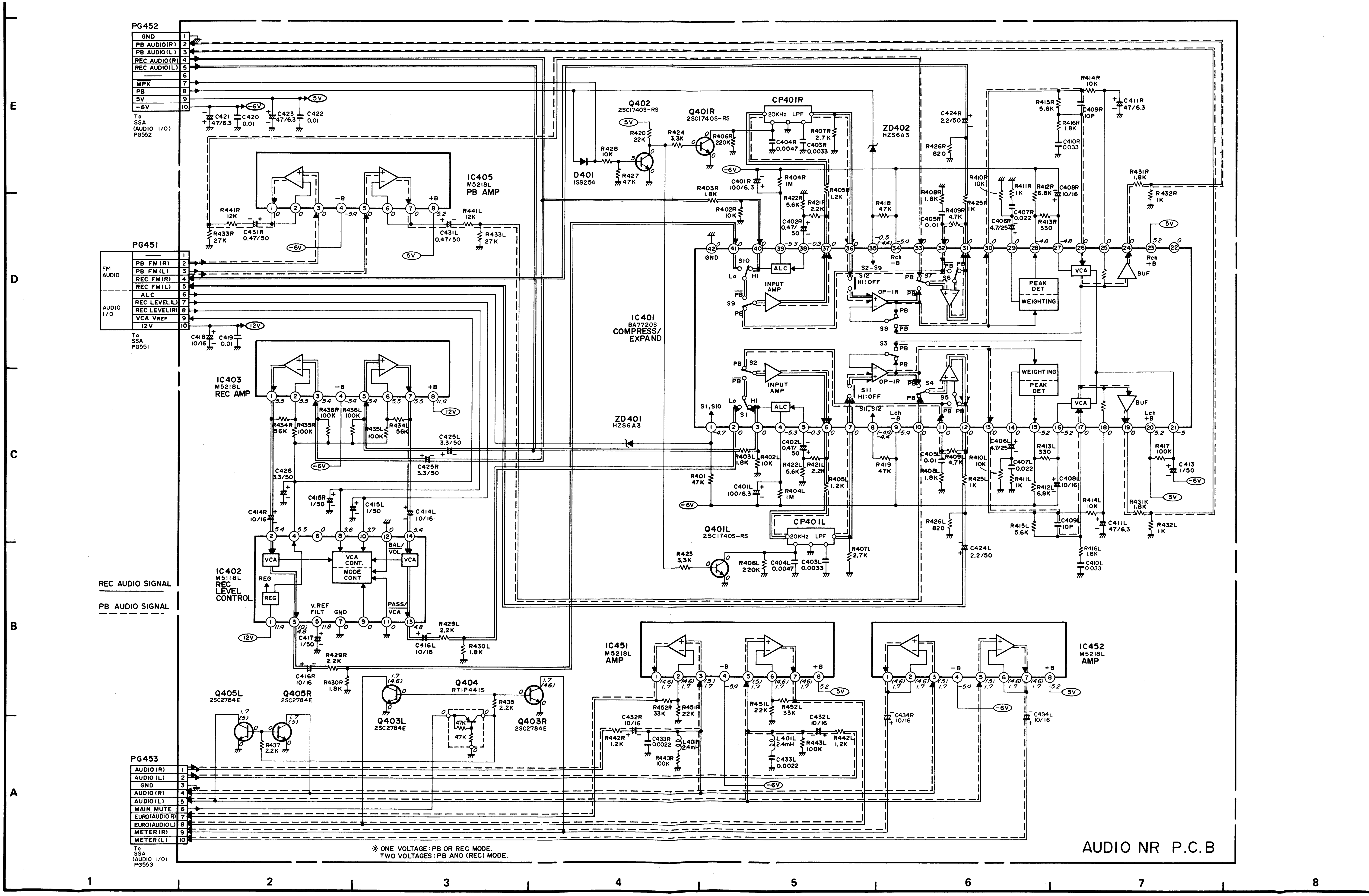
Y/C SEPARATE CIRCUIT BOARD DIAGRAM (Y/C−SEPARATOR)


IC2202
IC2201
IC2309
IC2204
IC2203
IC2205
IC2301
IC2302
IC2303
IC2304
IC2305
IC2306
IC2307
IC2308
RT2201
Y/C SEPARATE
RT2305
S-VHS PB LEVEL
RT2306
VHS PB LEVEL
RT2304
VCO
RT2205
E-E VIDEO OUTPUT LEVEL
HTK-5VA
150486
To REGULATOR PG853
To YTJ PG203
To YTJ PG201
To SSA PG606
PG2201
PG2202
PG2203
PG2204
250mA
ORN
BRN
E
D
C
B
A
1
2
3
4
5
6
7
8

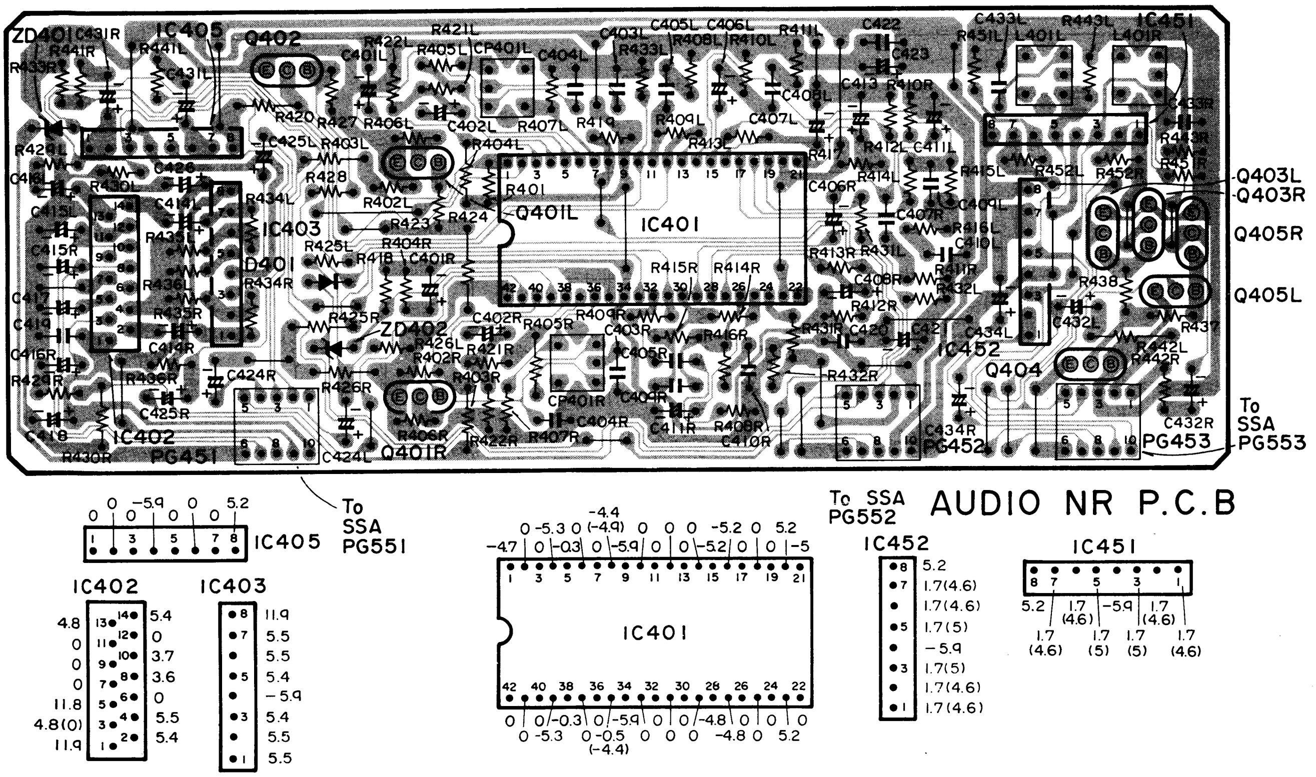
NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER
: MARK "●" IS LEADLESS (CHIP) COMPONENT

※ ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODE.

AUDIO NR SCHEMATIC DIAGRAM (AUDIO NR)


PG452
GND 1
PB AUDIO(R) 2
PB AUDIO(L) 3
REC AUDIO(R) 4
REC AUDIO(L) 5
6
MPX 7
PB 8
5V 9
−6V 10
To SSA (AUDIO I/O) PG552
PG451
1
PB FM(R) 2
PB FM(L) 3
REC FM(R) 4
REC FM(L) 5
ALC 6
REC LEVEL(L) 7
REC LEVEL(R) 8
VCA VREF 9
12V 10
FM AUDIO
AUDIO I/O
To SSA PG551
PG453
AUDIO (R) 1
AUDIO (L) 2
GND 3
AUDIO (R) 4
AUDIO (L) 5
MAIN MUTE 6
EURO(AUDIO R) 7
EURO(AUDIO L) 8
METER(R) 9
METER(L) 10
To SSA (AUDIO I/O) PG553
IC405 M5218L PB AMP
IC403 M5218L REC AMP
IC402 M5118L REC LEVEL CONTROL
IC401 BA7720S COMPRESS/ EXPAND
IC451 M5218L AMP
IC452 M5218L AMP
CP401R 20KHz LPF
CP401L 20KHz LPF
Q402 2SC1740S-RS
Q401R 2SC1740S-RS
Q401L 2SC1740S-RS
Q404 RTIP441S
Q403L 2SC2784E
Q403R 2SC2784E
Q405L 2SC2784E
Q405R 2SC2784E
D401 1SS254
ZD401 HZS6A3
ZD402 HZS6A3
VCA
VCA CONT.
MODE CONT
REG
BAL/VOL
PASS/VCA
V.REF FILT
GND
INPUT AMP
ALC
OP-IR
PEAK DET
WEIGHTING
BUF
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12
S2~S9
S1,S10
S11,S12
S12 HI:OFF
S11 HI:OFF
Lo HI
PB
Rch −B
Rch +B
Lch −B
Lch +B
5V
−6V
12V
REC AUDIO SIGNAL
PB AUDIO SIGNAL
AUDIO NR P.C.B
※ ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.
A B C D E
1 2 3 4 5 6 7 8

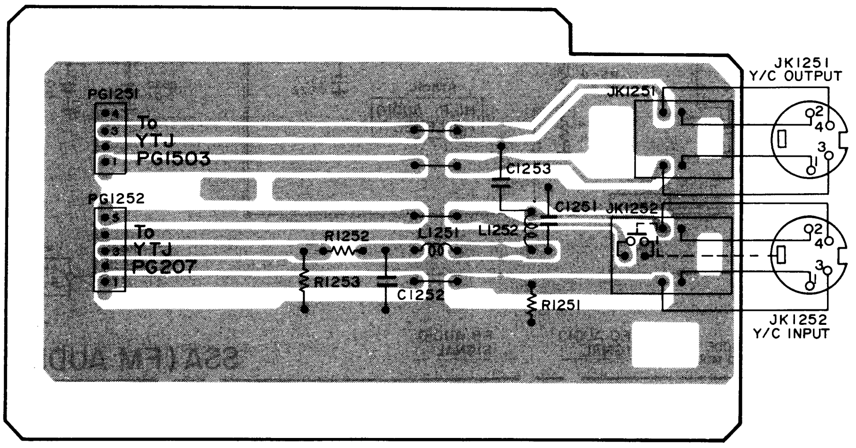
AUDIO NR CIRCUIT BOARD DIAGRAM (AUDIO NR)


ZD401
C431R
IC405
Q402
R441R
R441L
R439R
C431L
R421L
R422L
R405L
C401L
CP401L
C404L
C403L
C405L
C406L
R433L
R408L
R410L
R411L
C422
C423
C433L
R443L
IC451
R451L
L401L
L401R
R420
R427
R406L
C402L
R407L
R419
R409L
R413L
C407L
C408L
C413
R410R
C433R
R443R
R429L
C425L
R403L
R404L
R417
R412L
C411L
C412L
C428
R428
R401
C406R
R414L
R415L
R452L
R452R
R451R
Q403L
Q403R
R430L
C414L
R434L
R402L
R424
Q401L
C407R
C409L
C415L
IC403
R423
IC401
R416L
C410L
Q405R
C415R
R432L
R425L
R404R
R413R
R431L
R411R
R438
C417
R436L
D401
R418
C401R
R415R
R414R
C408R
R432L
Q405L
C419
R435R
R434R
R425R
C402R
R405R
R409R
C403R
R412R
C434L
C432L
R437
C416R
ZD402
R426L
R421R
R416R
R431R
C420
C421
IC452
C414R
R402R
C405R
R442L
R442R
R429R
R436R
C424R
R403R
R432R
Q404
C425R
R426R
CP401R
C404R
C409R
C434R
C432R
C418
IC402
R406R
C411R
R408R
To
R430R
PG451
C424L
Q401R
R422R
R407R
C410R
PG452
PG453
SSA
PG553
To
SSA
PG551
To SSA
PG552
0
0
-5.9
0
0
0
0
5.2
1
3
5
7
8
IC405
IC402
IC403
4.8
0
0
0
11.8
4.8(0)
11.9
14
13
12
11
10
9
8
7
6
5
4
3
2
1
5.4
0
3.7
3.6
0
5.5
5.4
8
7
5
3
1
11.9
5.5
5.5
5.4
-5.9
5.4
5.5
5.5
-4.4
0 -5.3 0 (-4.9) 0 0 0 -5.2 0 5.2
-4.7 0 0 -0.3 0 -5.9 0 0 -5.2 0 0 -5
1 3 5 7 9 11 13 15 17 19 21
IC401
42 40 38 36 34 32 30 28 26 24 22
0 0 -0.3 0 -5.9 0 0 -4.8 0 0 0
0 -5.3 0 -0.5 0 0 0 -4.8 0 5.2
(-4.4)
IC452
8
7
5
3
1
5.2
1.7(4.6)
1.7(4.6)
1.7(5)
-5.9
1.7(5)
1.7(4.6)
1.7(4.6)
IC451
8 7 5 3 1
5.2
1.7 (4.6)
-5.9
1.7 (4.6)
1.7 (4.6)
1.7 (5)
1.7 (5)
1.7 (4.6)

AUDIO NR P.C.B

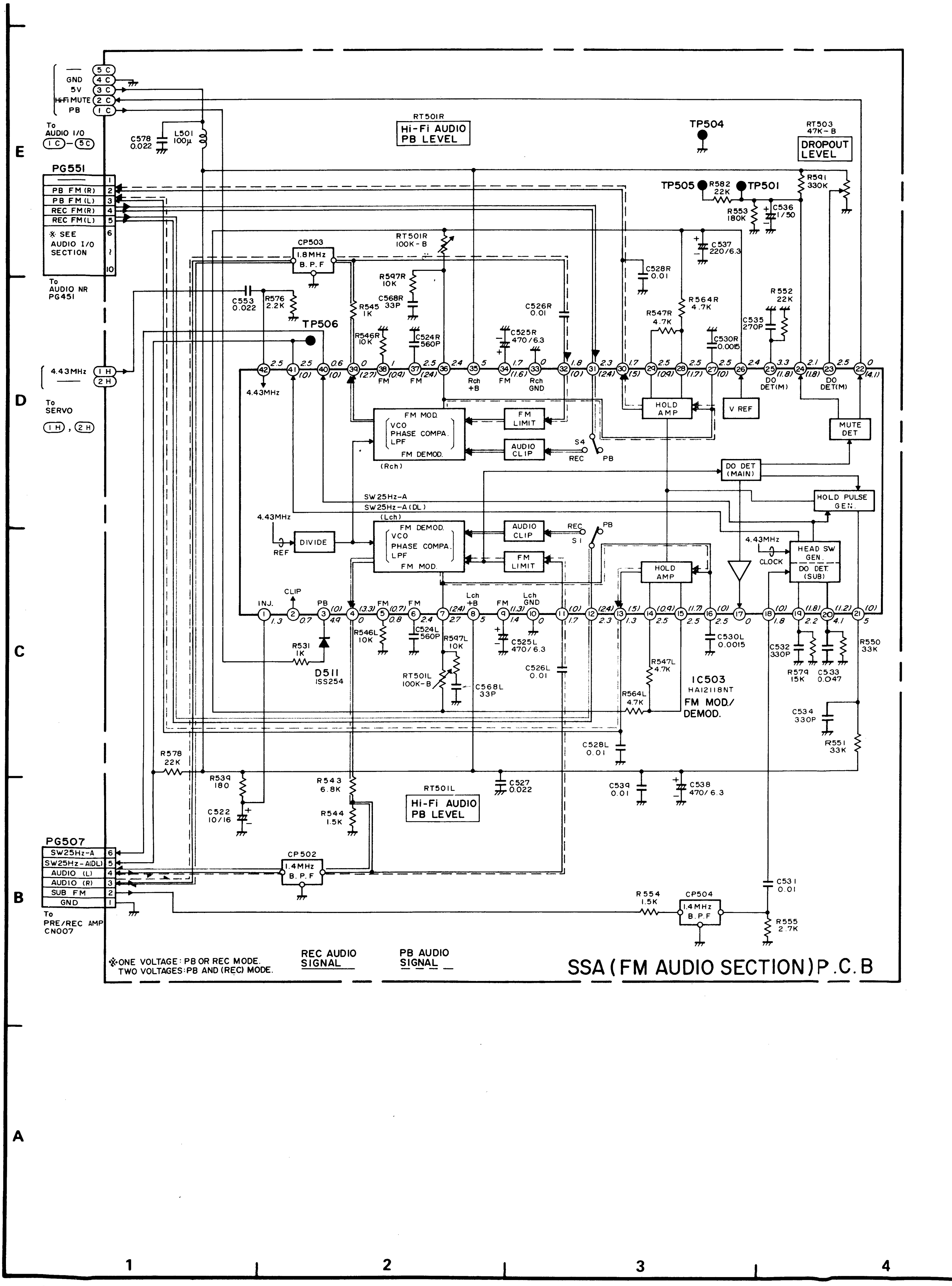
※ ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

S-CONNECT CIRCUIT BOARD DIAGRAM (S-STECKER)

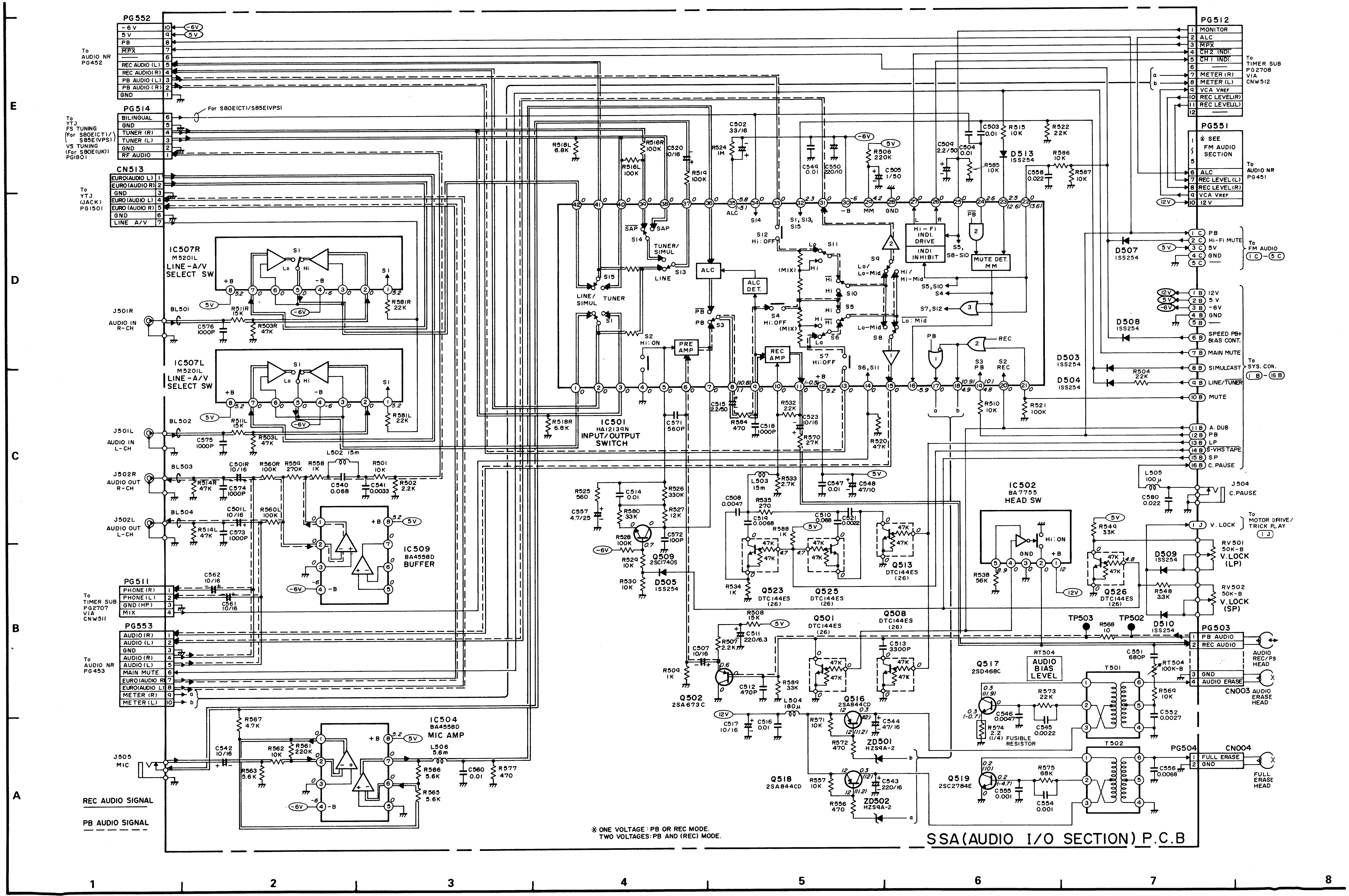

PG1251
To
YTJ
PG1503
C1253
PG1252
To
YTJ
PG207
R1232
L1251
L1252
C1251
JK1232
JK1251
R1253
C1252
R1251
JK1251
Y/C OUTPUT
JK1252
Y/C INPUT
SSA (FM AUD

S-CONNECTOR P.C.B

FM AUDIO SCHEMATIC DIAGRAM (FM AUDIO)

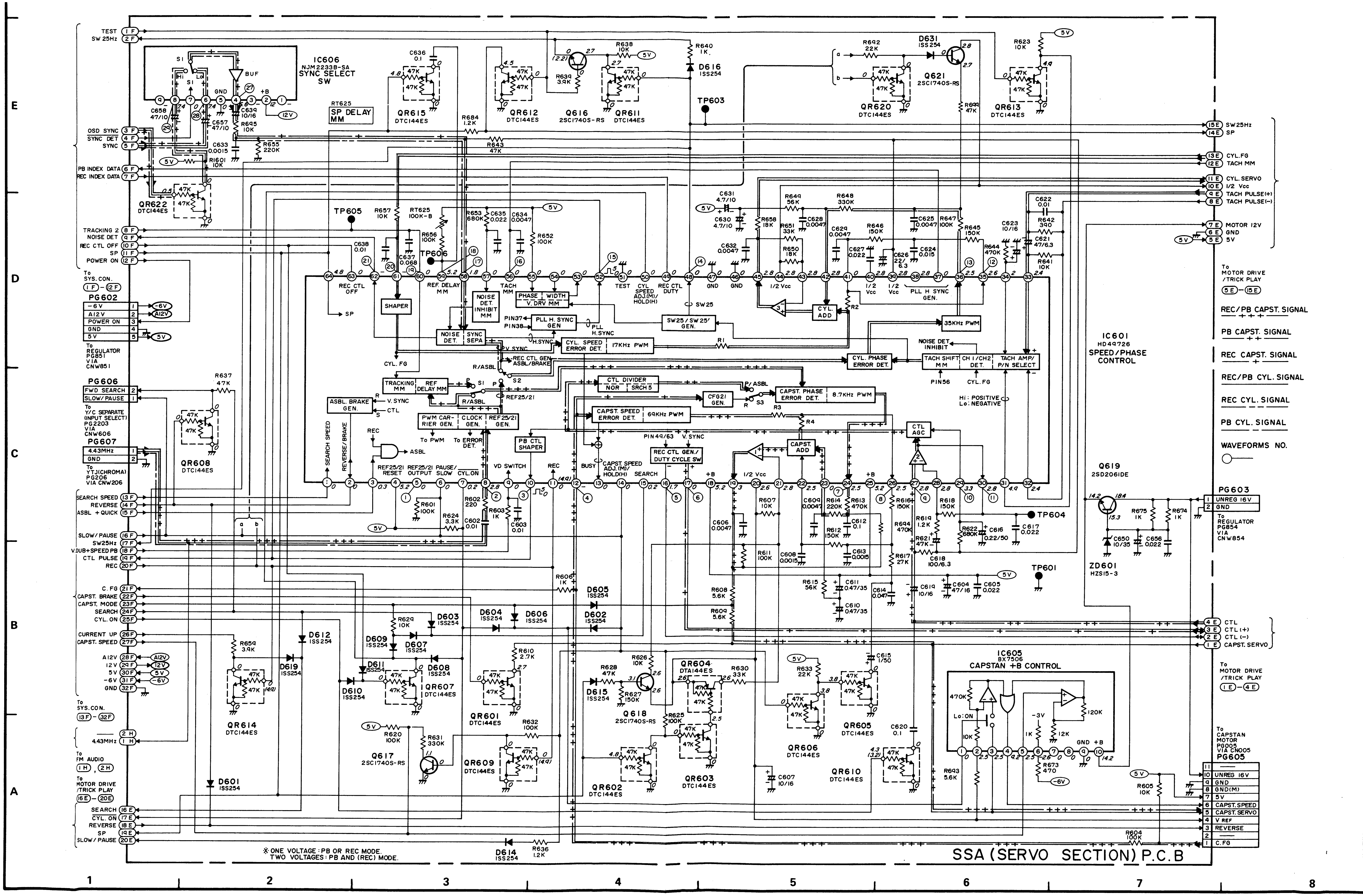

GND
5V
Hi-Fi MUTE
PB
5C
4C
3C
2C
1C
To AUDIO I/O 1C-5C
C578 0.022
L501 100μ
PG551
PB FM(R)
PB FM(L)
REC FM(R)
REC FM(L)
※ SEE AUDIO I/O SECTION
To AUDIO NR PG451
4.43MHz
1H
2H
To SERVO 1H, 2H
RT501R
Hi-Fi AUDIO PB LEVEL
TP504
RT503 47K-B
DROPOUT LEVEL
TP505
R582 22K
TP501
R591 330K
R553 180K
C536 1/50
C537 220/6.3
CP503
1.8MHz B.P.F
RT501R 100K-B
R597R 10K
C568R 33P
C528R 0.01
R545 1K
C553 0.022
R576 2.2K
TP506
C526R 0.01
R564R 4.7K
R547R 4.7K
R552 22K
C535 270P
C530R 0.0015
R546R 10K
C524R 560P
C525R 470/6.3
4.43MHz
Rch +B
Rch GND
FM
DO DET(M)
FM MOD.
VCO
PHASE COMPA.
LPF
FM DEMOD.
(Rch)
FM LIMIT
AUDIO CLIP
S4
REC
PB
HOLD AMP
V REF
MUTE DET
DO DET (MAIN)
HOLD PULSE GEN.
SW25Hz-A
SW25Hz-A(DL)
(Lch)
4.43MHz
REF
DIVIDE
FM DEMOD.
VCO
PHASE COMPA.
LPF
FM MOD.
AUDIO CLIP
FM LIMIT
REC
S1
PB
4.43MHz
CLOCK
HEAD SW GEN.
DO DET. (SUB)
HOLD AMP
CLIP
INJ.
PB
FM
Lch +B
Lch GND
R531 1K
D511 1SS254
R546L 10K
C524L 560P
R597L 10K
RT501L 100K-B
C568L 33P
C525L 470/6.3
C526L 0.01
R547L 4.7K
R564L 4.7K
C530L 0.0015
IC503 HA12118NT
FM MOD./DEMOD.
C532 330P
R579 15K
C533 0.047
R550 33K
C534 330P
R551 33K
C528L 0.01
R578 22K
R539 180
C522 10/16
R543 6.8K
R544 1.5K
RT501L
Hi-Fi AUDIO PB LEVEL
C527 0.022
C539 0.01
C538 470/6.3
PG507
SW25Hz-A
SW25Hz-A(DL)
AUDIO (L)
AUDIO (R)
SUB FM
GND
To PRE/REC AMP CN007
CP502
1.4MHz B.P.F
R554 1.5K
CP504
1.4MHz B.P.F
C531 0.01
R555 2.7K
※ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODE.
REC AUDIO SIGNAL
PB AUDIO SIGNAL
SSA (FM AUDIO SECTION) P.C.B
E
D
C
B
A
1
2
3
4

AUDIO I/O SCHEMATIC DIAGRAM (AUDIO EINGANG/AUSGANG)



PG552
-6V
5V
PB
MPX
REC AUDIO (L)
REC AUDIO (R)
PB AUDIO (L)
PB AUDIO (R)
GND
To AUDIO NR PG452
PG514
BILINGUAL
TUNER (R)
TUNER (L)
RF AUDIO
For S80E(CT)/S85E(VPS)
To YTJ FS TUNING (For S80E(CT)/S85E(VPS)) VS TUNING (For S80E(UK)) PG1801
CN513
EURO(AUDIO L)
EURO(AUDIO R)
EURO(AUDIO L)
EURO(AUDIO R)
LINE A/V
To YTJ (JACK) PG1501
IC507R M5201L LINE-A/V SELECT SW
IC507L M5201L LINE-A/V SELECT SW
J501R AUDIO IN R-CH
J501L AUDIO IN L-CH
J502R AUDIO OUT R-CH
J502L AUDIO OUT L-CH
BL501
BL502
BL503
BL504
IC509 BA4558D BUFFER
PG511
PHONE (R)
PHONE (L)
GND (HP)
MIX
To TIMER SUB PG2707 VIA CNW511
PG553
AUDIO (R)
AUDIO (L)
MAIN MUTE
EURO(AUDIO R)
EURO(AUDIO L)
METER (R)
METER (L)
To AUDIO NR PG453
J505 MIC
IC504 BA4558D MIC AMP
REC AUDIO SIGNAL
PB AUDIO SIGNAL
IC501 HA12134N INPUT/OUTPUT SWITCH
LINE/SIMUL
TUNER
TUNER/SIMUL
LINE
ALC
ALC DET.
PRE AMP
REC AMP
Hi-Fi INDI. DRIVE
INDI INHIBIT
MUTE DET. MM
Q509 2SC1740S
D505 1SS254
Q523 DTC144ES
Q525 DTC144ES
Q513 DTC144ES
Q501 DTC144ES
Q508 DTC144ES
Q502 2SA673C
Q516 2SA844CD
Q518 2SA844CD
ZD501 HZS9A-2
ZD502 HZS9A-2
Q517 2SD468C
Q519 2SC2784E
FUSIBLE RESISTOR
RT504 AUDIO BIAS LEVEL
T501
T502
IC502 BA7755 HEAD SW
D513 1SS254
D507 1SS254
D508 1SS254
D503 1SS254
D504 1SS254
D509 1SS254
D510 1SS254
Q526 DTC144ES
RV501 50K-B V.LOCK (LP)
RV502 50K-B V.LOCK (SP)
TP503
TP502
PG512
MONITOR
ALC
MPX
CH2 INDI.
CH1 INDI.
METER (R)
METER (L)
VCA VREF
REC LEVEL(R)
REC LEVEL(L)
To TIMER SUB PG2708 VIA CNW512
PG551
※ SEE FM AUDIO SECTION
REC LEVEL (L)
REC LEVEL (R)
12V
To AUDIO NR PG451
PB
Hi-Fi MUTE
To FM AUDIO (1C)-(5C)
SPEED PB+ BIAS CONT.
MAIN MUTE
SIMULCAST
LINE/TUNER
To SYS. CON. (1B)-(16B)
MUTE
A. DUB
LP
S-VHS TAPE
SP
C. PAUSE
J504 C.PAUSE
V. LOCK
To MOTOR DRIVE/TRICK PLAY (1J)
PG503
PB AUDIO
REC AUDIO
AUDIO ERASE
AUDIO REC/PB HEAD
CN003 AUDIO ERASE HEAD
PG504
FULL ERASE
CN004
FULL ERASE HEAD
※ONE VOLTAGE: PB OR REC MODE. TWO VOLTAGES: PB AND (REC) MODE.
SSA(AUDIO I/O SECTION) P.C.B
A
B
C
D
E
1
2
3
4
5
6
7
8

SERVO SCHEMATIC DIAGRAM (SERVO)


IC606
NJM2233B-SA
SYNC SELECT SW
IC601
HD49726
SPEED/PHASE CONTROL
IC605
BX7506
CAPSTAN +B CONTROL
SSA (SERVO SECTION) P.C.B
PG602
PG603
PG605
PG606
PG607
QR615 DTC144ES
QR612 DTC144ES
Q616 2SC1740S-RS
QR611 DTC144ES
QR620 DTC144ES
Q621 2SC1740S-RS
QR613 DTC144ES
QR622 DTC144ES
QR608 DTC144ES
Q619 2SD2061DE
ZD601 HZS15-3
QR614 DTC144ES
QR607 DTC144ES
QR601 DTC144ES
Q617 2SC1740S-RS
QR609 DTC144ES
QR602 DTC144ES
Q618 2SC1740S-RS
QR604 DTA144ES
QR603 DTC144ES
QR606 DTC144ES
QR605 DTC144ES
QR610 DTC144ES
TP601
TP603
TP604
TP605
TP606
RT625 SP DELAY MM
TEST 1F
SW 25Hz 2F
OSD SYNC 3F
SYNC DET 4F
SYNC 5F
PB INDEX DATA 6F
REC INDEX DATA 7F
TRACKING 2 8F
NOISE DET 9F
REC CTL OFF 10F
SP 11F
POWER ON 12F
To SYS.CON. 1F-12F
SEARCH SPEED 13F
REVERSE 14F
ASBL +QUICK 15F
SLOW/PAUSE 16F
SW25Hz 17F
V.DUB+SPEED PB 18F
CTL PULSE 19F
REC 20F
C.FG 21F
CAPST. BRAKE 22F
CAPST. MODE 23F
SEARCH 24F
CYL. ON 25F
CURRENT UP 26F
CAPST. SPEED 27F
A12V 28F
12V 29F
5V 30F
-6V 31F
GND 32F
To SYS.CON. 13F-32F
4.43MHz 1H
To FM AUDIO 1H, 2H
To MOTOR DRIVE /TRICK PLAY 16E-20E
SEARCH 16E
CYL. ON 17E
REVERSE 18E
SP 19E
SLOW/PAUSE 20E
SW25Hz 15E
SP 14E
CYL.FG 13E
TACH MM 12E
CYL. SERVO 11E
1/2 Vcc 10E
TACH PULSE(+) 9E
TACH PULSE(-) 8E
MOTOR 12V 7E
GND 6E
5V 5E
To MOTOR DRIVE /TRICK PLAY 5E-15E
CTL 4E
CTL(+) 3E
CTL(-) 2E
CAPST. SERVO 1E
To MOTOR DRIVE /TRICK PLAY 1E-4E
UNREG 16V
GND
To REGULATOR PG854 VIA CNW854
To REGULATOR PG851 VIA CNW851
FWD SEARCH
SLOW/PAUSE
To Y/C SEPARATE (INPUT SELECT) PG2203 VIA CNW606
To YTJ(CHROMA) PG206 VIA CNW206
To CAPSTAN MOTOR PG005 VIA CN005
REC/PB CAPST. SIGNAL
PB CAPST. SIGNAL
REC CAPST. SIGNAL
REC/PB CYL. SIGNAL
REC CYL. SIGNAL
PB CYL. SIGNAL
WAVEFORMS NO.
SHAPER
NOISE DET.
SYNC SEPA
NOISE DET. INHIBIT MM
PHASE WIDTH V. DRV MM
PLL H. SYNC GEN
CYL. SPEED ERROR DET.
17KHz PWM
SW25/SW25' GEN.
CYL. ADD
35KHz PWM
CYL. PHASE ERROR DET.
TACH SHIFT MM
CH1/CH2 DET.
TACH AMP/ P/N SELECT
TRACKING MM
REF DELAY MM
ASBL. BRAKE GEN.
PWM CARRIER GEN.
CLOCK GEN.
REF25/21 GEN.
PB CTL SHAPER
CTL DIVIDER NOR SRCH 5
CF621 GEN.
CAPST. PHASE ERROR DET.
8.7KHz PWM
CAPST. SPEED ERROR DET.
69KHz PWM
CAPST. ADD
CTL AGC
REC CTL GEN./ DUTY CYCLE SW
REC CTL GEN ASBL/BRAKE
Hi: POSITIVE Lo: NEGATIVE
※ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODE.
1
2
3
4
5
6
7
8
A
B
C
D
E

MOTOR DRIVE/TRICK PLAY/CAPSTAN MOTOR DRIVE/SENSOR(2/2) SCHEMATIC DIAGRAM
(MOTORTREIBER/TRICKWIEDERGABE/CAPSTANMOTORTREIBER/SENSOR 2/2)

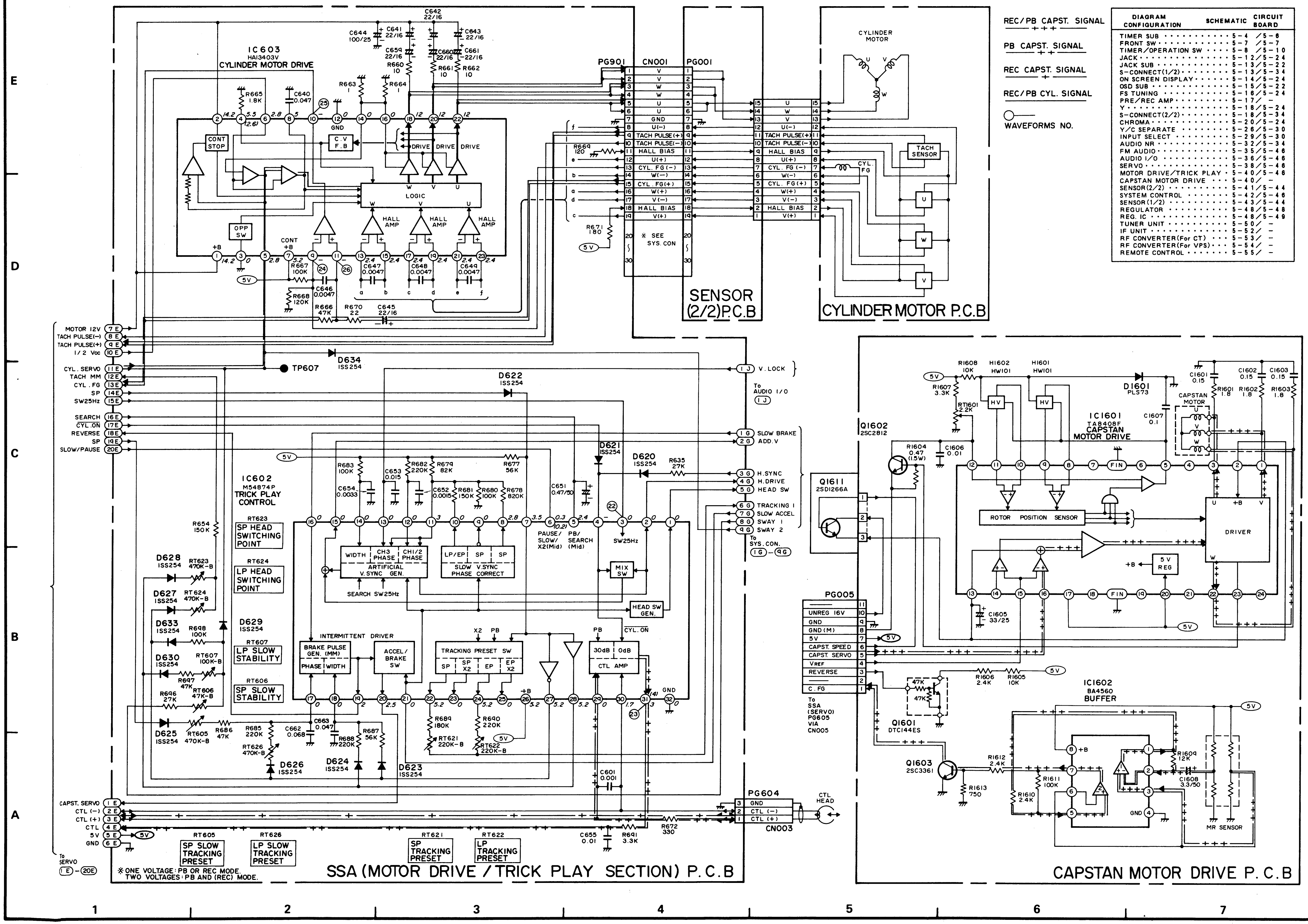
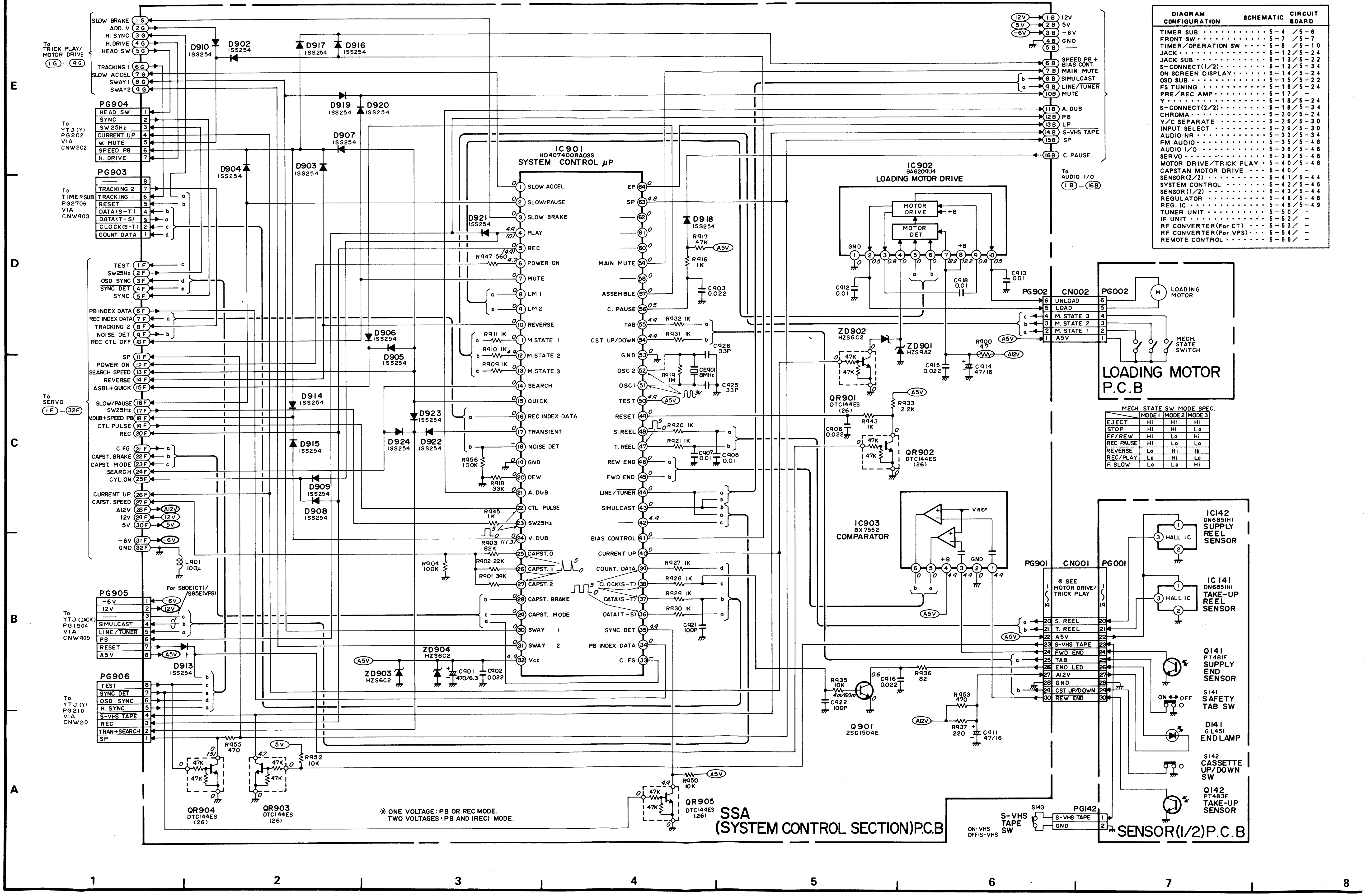

REC/PB CAPST. SIGNAL
PB CAPST. SIGNAL
REC CAPST. SIGNAL
REC/PB CYL. SIGNAL
WAVEFORMS NO.
IC603
HA13403V
CYLINDER MOTOR DRIVE
CONT STOP
C.V F.B
DRIVE
LOGIC
HALL AMP
OPP SW
PG901
CN001
PG001
SENSOR (2/2) P.C.B
CYLINDER MOTOR
TACH SENSOR
CYL FG
CYLINDER MOTOR P.C.B
U
V
W
GND
U(−)
TACH PULSE(+)
TACH PULSE(−)
HALL BIAS
U(+)
CYL. FG(−)
W(−)
CYL. FG(+)
W(+)
V(−)
V(+)
※ SEE SYS. CON
MOTOR 12V
TACH PULSE(−)
TACH PULSE(+)
1/2 Vcc
CYL. SERVO
TACH MM
CYL. FG
SP
SW25Hz
SEARCH
CYL. ON
REVERSE
SP
SLOW/PAUSE
TP607
D634 ISS254
D622 ISS254
D621 ISS254
D620 ISS254
V. LOCK
To AUDIO I/O
SLOW BRAKE
ADD.V
H.SYNC
H.DRIVE
HEAD SW
TRACKING I
SLOW ACCEL
SWAY 1
SWAY 2
To SYS. CON.
IC602
M54874P
TRICK PLAY CONTROL
SP HEAD SWITCHING POINT
LP HEAD SWITCHING POINT
LP SLOW STABILITY
SP SLOW STABILITY
WIDTH
CH3 PHASE
CH1/2 PHASE
ARTIFICIAL V. SYNC GEN.
SEARCH SW25Hz
LP/EP
SLOW V.SYNC PHASE CORRECT
PAUSE/ SLOW/ X2(Mid)
PB/ SEARCH (Mid)
MIX SW
HEAD SW GEN.
INTERMITTENT DRIVER
BRAKE PULSE GEN. (MM)
PHASE
ACCEL/ BRAKE SW
TRACKING PRESET SW
EP
X2
30dB
0dB
CTL AMP
CYL. ON
CAPST. SERVO
CTL (−)
CTL (+)
CTL
5V
GND
To SERVO
PG604
CTL HEAD
CN003
SP SLOW TRACKING PRESET
LP SLOW TRACKING PRESET
SP TRACKING PRESET
LP TRACKING PRESET
※ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODE.
SSA (MOTOR DRIVE / TRICK PLAY SECTION) P.C.B
Q1602 2SC2812
Q1611 2SD1266A
PG005
UNREG 16V
GND (M)
CAPST. SPEED
CAPST. SERVO
VREF
REVERSE
C. FG
To SSA (SERVO) PG605 VIA CN005
Q1601 DTC144ES
Q1603 2SC3361
IC1601
TA8408F
CAPSTAN MOTOR DRIVE
D1601 PLS73
H1602 HW101
H1601 HW101
HV
CAPSTAN MOTOR
ROTOR POSITION SENSOR
DRIVER
5V REG
FIN
IC1602
BA4560
BUFFER
MR SENSOR
CAPSTAN MOTOR DRIVE P.C.B
A
B
C
D
E
1
2
3
4
5
6
7
8

DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5−4	/5−6
FRONT SW	5−7	/5−7
TIMER/OPERATION SW	5−8	/5−10
JACK	5−12	/5−24
JACK SUB	5−13	/5−22
S−CONNECT(1/2)	5−13	/5−34
ON SCREEN DISPLAY	5−14	/5−24
OSD SUB	5−15	/5−22
FS TUNING	5−16	/5−24
PRE/REC AMP	5−17	/ −
Y	5−18	/5−24
S−CONNECT(2/2)	5−18	/5−34
CHROMA	5−20	/5−24
Y/C SEPARATE	5−26	/5−30
INPUT SELECT	5−29	/5−30
AUDIO NR	5−32	/5−34
FM AUDIO	5−35	/5−46
AUDIO I/O	5−36	/5−46
SERVO	5−38	/5−46
MOTOR DRIVE/TRICK PLAY	5−40	/5−46
CAPSTAN MOTOR DRIVE	5−40	/ −
SENSOR(2/2)	5−41	/5−44
SYSTEM CONTROL	5−42	/5−46
SENSOR(1/2)	5−43	/5−44
REGULATOR	5−48	/5−48
REG. IC	5−48	/5−49
TUNER UNIT	5−50	/ −
IF UNIT	5−52	/ −
RF CONVERTER(For CT)	5−53	/ −
RF CONVERTER(For VPS)	5−54	/ −
REMOTE CONTROL	5−55	/ −

SYSTEM CONTROL/SENSOR(1/2) SCHEMATIC DIAGRAM(SYSTEMREGELUNG/SENSOR 1/2)

DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5－4	/5－6
FRONT SW	5－7	/5－7
TIMER/OPERATION SW	5－8	/5－10
JACK	5－12	/5－24
JACK SUB	5－13	/5－22
S-CONNECT(1/2)	5－13	/5－34
ON SCREEN DISPLAY	5－14	/5－24
OSD SUB	5－15	/5－22
FS TUNING	5－16	/5－24
PRE/REC AMP	5－17	/ －
Y	5－18	/5－24
S-CONNECT(2/2)	5－18	/5－34
CHROMA	5－20	/5－24
Y/C SEPARATE	5－26	/5－30
INPUT SELECT	5－29	/5－30
AUDIO NR	5－32	/5－34
FM AUDIO	5－35	/5－46
AUDIO I/O	5－36	/5－46
SERVO	5－38	/5－46
MOTOR DRIVE/TRICK PLAY	5－40	/5－46
CAPSTAN MOTOR DRIVE	5－40	/ －
SENSOR(2/2)	5－41	/5－44
SYSTEM CONTROL	5－42	/5－46
SENSOR(1/2)	5－43	/5－44
REGULATOR	5－48	/5－48
REG. IC	5－48	/5－49
TUNER UNIT	5－50	/ －
IF UNIT	5－52	/ －
RF CONVERTER(For CT)	5－53	/ －
RF CONVERTER(For VPS)	5－54	/ －
REMOTE CONTROL	5－55	/ －

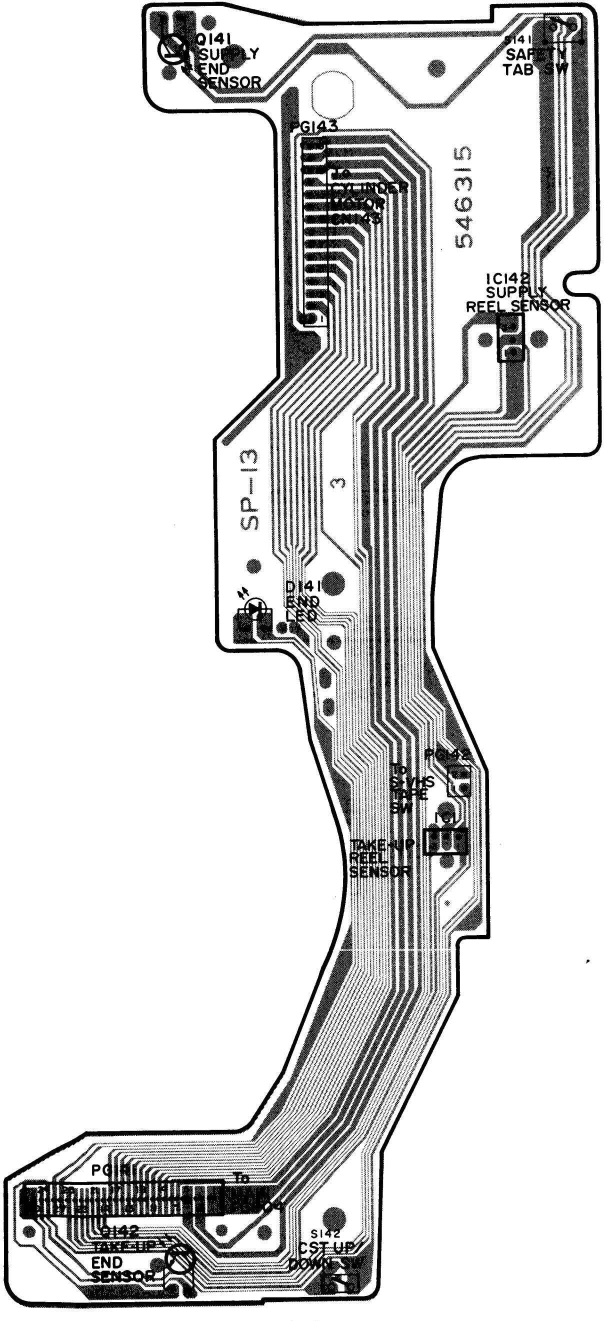


E
D
C
B
A
1
2
3
4
5
6
7
8
To TRICK PLAY/MOTOR DRIVE (1G)-(9G)
SLOW BRAKE 1G
ADD. V 2G
H. SYNC 3G
H. DRIVE 4G
HEAD SW 5G
TRACKING I 6G
SLOW ACCEL 7G
SWAY1 8G
SWAY2 9G
PG904
HEAD SW
SYNC
SW25Hz
CURRENT UP
W. MUTE
SPEED PB
H. DRIVE
To YTJ(Y) PG202 VIA CNW202
PG903
TRACKING 2
TRACKING 1
RESET
DATA(S-T)
DATA(T-S)
CLOCK(S-T)
COUNT DATA
To TIMER SUB PG2706 VIA CNW903
TEST 1F
SW25Hz 2F
OSD SYNC 3F
SYNC DET 4F
SYNC 5F
PB INDEX DATA 6F
REC INDEX DATA 7F
TRACKING 2 8F
NOISE DET 9F
REC CTL OFF 10F
SP 11F
POWER ON 12F
SEARCH SPEED 13F
REVERSE 14F
ASBL+QUICK 15F
SLOW/PAUSE 16F
SW25Hz 17F
VDUB+SPEED PB 18F
CTL PULSE 19F
REC 20F
C.FG 21F
CAPST. BRAKE 22F
CAPST. MODE 23F
SEARCH 24F
CYL.ON 25F
CURRENT UP 26F
CAPST. SPEED 27F
A12V 28F
12V 29F
5V 30F
-6V 31F
GND 32F
To SERVO (1F)-(32F)
L901 100μ
PG905
-6V
12V
SIMULCAST
LINE/TUNER
PB
RESET
A5V
To YTJ (JACK) PG1504 VIA CNW905
For S80E(CT)/S85E(VPS)
PG906
TEST
SYNC DET
OSD SYNC
H. SYNC
S-VHS TAPE
REC
TRAN+SEARCH
SP
To YTJ(Y) PG210 VIA CNW210
D910 1SS254
D902 1SS254
D917 1SS254
D916 1SS254
D919 1SS254
D920 1SS254
D907 1SS254
D904 1SS254
D903 1SS254
D921 1SS254
D906 1SS254
D905 1SS254
D914 1SS254
D923 1SS254
D924 1SS254
D922 1SS254
D915 1SS254
D909 1SS254
D908 1SS254
D913 1SS254
D918 1SS254
IC901 HD404008A03S SYSTEM CONTROL μP
1 SLOW ACCEL
2 SLOW/PAUSE
3 SLOW BRAKE
4 PLAY
5 REC
6 POWER ON
7 MUTE
8 LM 1
9 LM 2
10 REVERSE
11 M.STATE 1
12 M.STATE 2
13 M.STATE 3
14 SEARCH
15 QUICK
16 REC INDEX DATA
17 TRANSIENT
18 NOISE DET
19 GND
20 DEW
21 A. DUB
22 CTL PULSE
23 SW25Hz
24 V. DUB
25 CAPST.0
26 CAPST. 1
27 CAPST. 2
28 CAPST. BRAKE
29 CAPST. MODE
30 SWAY 1
31 SWAY 2
32 Vcc
64 EP
63 SP
62
61
60
59 MAIN MUTE
58
57 ASSEMBLE
56 C. PAUSE
55 TAB
54 CST UP/DOWN
53 GND
52 OSC 2
51 OSC 1
50 TEST
49 RESET
48 S. REEL
47 T. REEL
46 REW END
45 FWD END
44 LINE/TUNER
43 SIMULCAST
42
41 BIAS CONTROL
40 CURRENT UP
39 COUNT. DATA
38 CLOCK(S-T)
37 DATA(S-T)
36 DATA(T-S)
35 SYNC DET
34 PB INDEX DATA
33 C. FG
R947 560
R911 1K
R910 1K
R909 1K
R956 100K
R918 33K
R945 1K
R903 82K
R904 100K
R902 22K
R901 39K
R917 47K
R916 1K
C903 0.022
R932 1K
R931 1K
C926 33P
R919 1M
CE901 8MHz
C925 33P
R920 1K
R921 1K
C907 0.01
C908 0.01
R927 1K
R928 1K
R929 1K
R930 1K
C921 100P
ZD904 HZS6C2
C901 470/6.3
C902 0.022
ZD903 HZS6C2
R955 470
R952 10K
QR904 DTC144ES (26)
QR903 DTC144ES (26)
※ ONE VOLTAGE : PB OR REC MODE. TWO VOLTAGES : PB AND (REC) MODE.
R950 10K
QR905 DTC144ES (26)
SSA (SYSTEM CONTROL SECTION)P.C.B
R935 10K
C922 100P
Q901 2SD1504E
C916 0.022
R936 82
R953 470
R937 220
C911 47/16
12V 1B 12V
5V 2B 5V
-6V 3B -6V
4B GND
5B —
6B SPEED PB + BIAS CONT.
7B MAIN MUTE
8B SIMULCAST
9B LINE/TUNER
10B MUTE
11B A. DUB
12B PB
13B LP
14B S-VHS TAPE
15B SP
16B C. PAUSE
To AUDIO I/O (1B)-(16B)
IC902 BA6209U4 LOADING MOTOR DRIVE
MOTOR DRIVE
MOTOR DET
C912 0.01
C918 0.01
C913 0.01
PG902 CN002 PG002
UNLOAD
LOAD
M. STATE 3
M. STATE 2
M. STATE 1
A5V
LOADING MOTOR
MECH. STATE SWITCH
LOADING MOTOR P.C.B
ZD902 HZS6C2
ZD901 HZS9A2
R900 4.7
C915 0.022
C914 47/16
QR901 DTC144ES (26)
R933 2.2K
C906 0.022
R943 1K
QR902 DTC144ES (26)
IC903 BX7552 COMPARATOR
VREF
PG901 CN001 PG001
※ SEE MOTOR DRIVE/TRICK PLAY
S. REEL
T. REEL
A5V
S-VHS TAPE
FWD END
TAB
END LED
A12V
GND
CST UP/DOWN
REW END
IC142 DN6851H1 SUPPLY REEL SENSOR
HALL IC
IC141 DN6851H1 TAKE-UP REEL SENSOR
Q141 PT481F SUPPLY END SENSOR
S141 SAFETY TAB SW
ON OFF
D141 GL451 END LAMP
S142 CASSETTE UP/DOWN SW
Q142 PT483F TAKE-UP SENSOR
S143 PG142
S-VHS TAPE SW
ON: VHS OFF: S-VHS
SENSOR(1/2)P.C.B

MECH. STATE SW MODE SPEC.

	MODE 1	MODE 2	MODE 3
EJECT	Hi	Hi	Hi
STOP	HI	Hi	Lo
FF/REW	Hi	Lo	Hi
REC PAUSE	HI	Lo	Lo
REVERSE	Lo	Hi	Hi
REC/PLAY	Lo	Hi	Lo
F. SLOW	Lo	Lo	Hi

SENSOR CIRCUIT BOARD DIAGRAM (SENSOR)



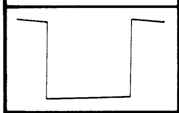
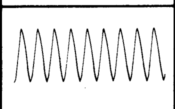
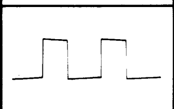
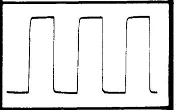
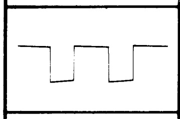
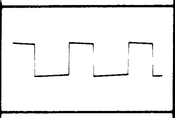
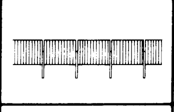
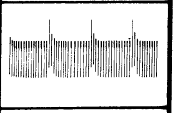
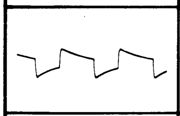
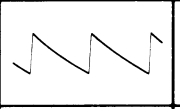
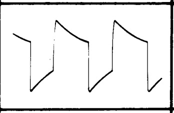
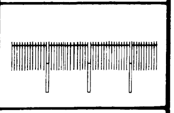
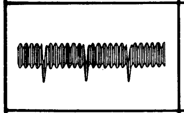
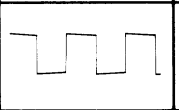
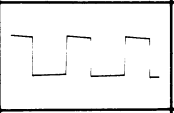
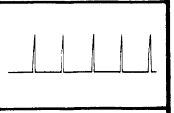
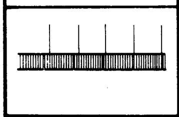
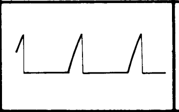
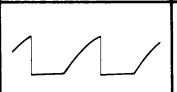
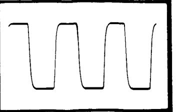
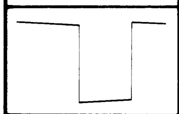
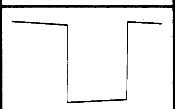
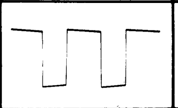
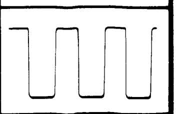
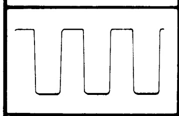
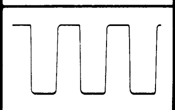
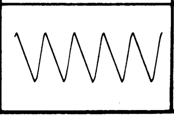
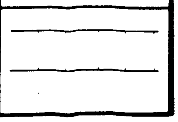
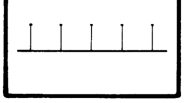
SENSOR P.C.B

DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5-4	/5-6
FRONT SW	5-7	/5-7
TIMER/OPERATION SW	5-8	/5-10
JACK	5-12	/5-24
JACK SUB	5-13	/5-22
S-CONNECT(1/2)	5-13	/5-34
ON SCREEN DISPLAY	5-14	/5-24
OSD SUB	5-15	/5-22
FS TUNING	5-16	/5-24
PRE/REC AMP	5-17	/ -
Y	5-18	/5-24
S-CONNECT(2/2)	5-18	/5-34
CHROMA	5-20	/5-24
Y/C SEPARATE	5-26	/5-30
INPUT SELECT	5-29	/5-30
AUDIO NR	5-32	/5-34
FM AUDIO	5-35	/5-46
AUDIO I/O	5-36	/5-46
SERVO	5-38	/5-46
MOTOR DRIVE/TRICK PLAY	5-40	/5-46
CAPSTAN MOTOR DRIVE	5-40	/ -
SENSOR(2/2)	5-41	/5-44
SYSTEM CONTROL	5-42	/5-46
SENSOR(1/2)	5-43	/5-44
REGULATOR	5-48	/5-48
REG. IC	5-48	/5-49
TUNER UNIT	5-50	/ -
IF UNIT	5-52	/ -
RF CONVERTER(For CT)	5-53	/ -
RF CONVERTER(For VPS)	5-54	/ -
REMOTE CONTROL	5-55	/ -

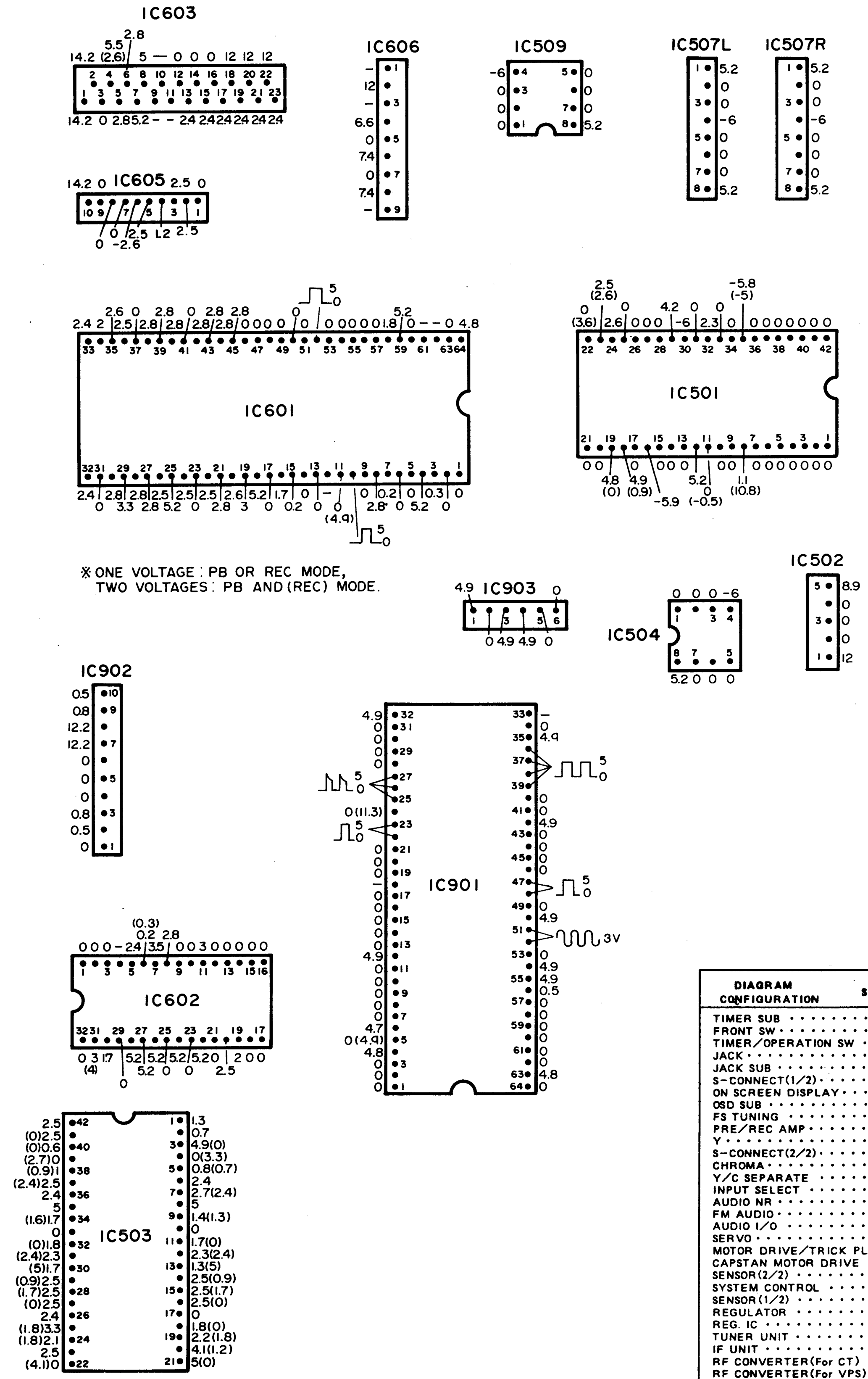
SERVO WAVEFORMS
(SERVO-WELLENFORMEN)

Note:Measurement conditions are as follows.
REC:Colour bars, 1Vp-p at video input jack.
PLAY:Use alignment tape (colour bar section).

Hinweis:Die folgenden Meßbedingungen einhalten.
Aufnahme:Farbbalken, 1Vs-s an Video-Eingangsbuchse.
Wiedergabe:Abgleichband (Farbbalkenabschnitt) verwenden.

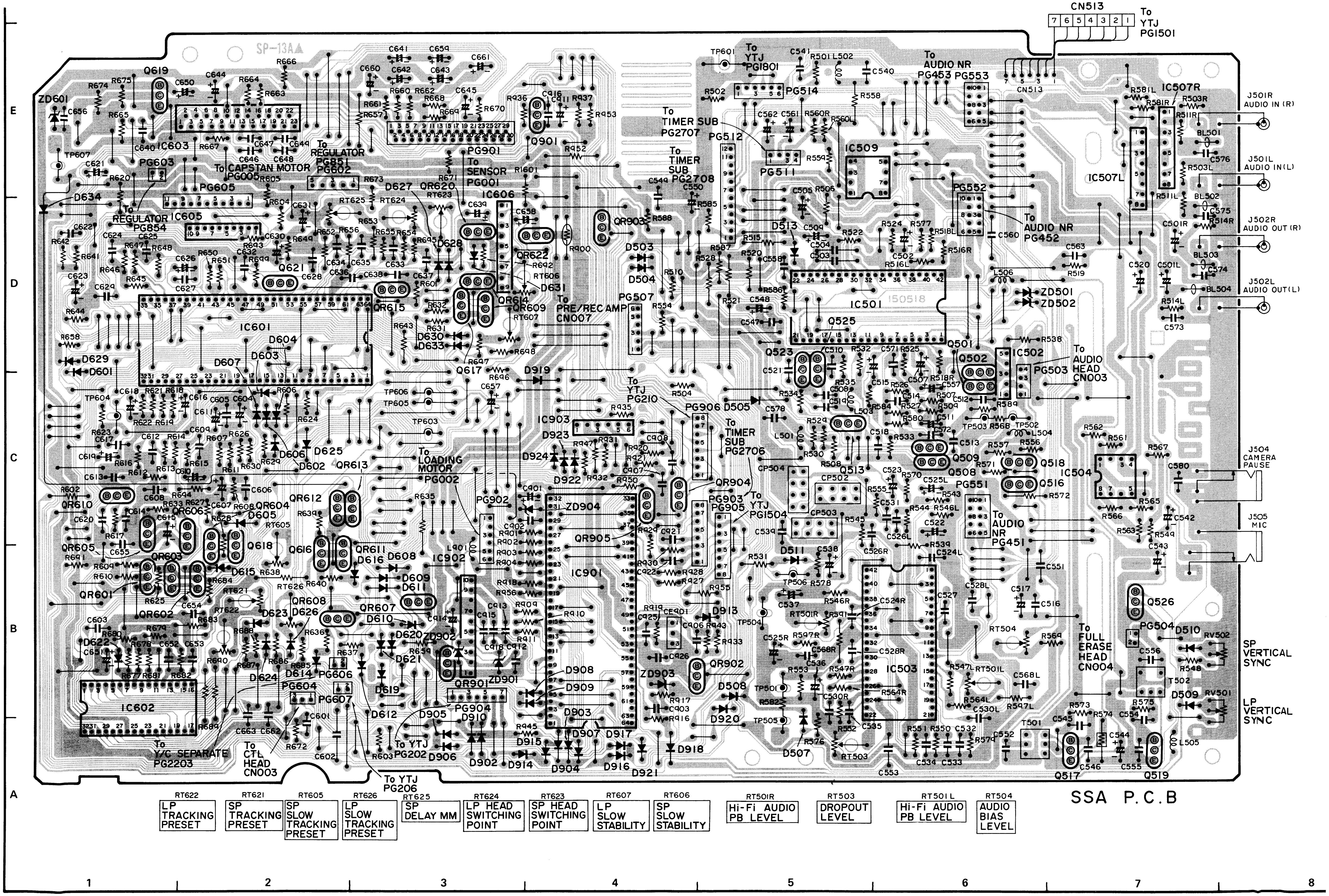
1-A IC601-5 5.4Vp-p 1V/5.0m sec. REC/PLAY	2-A IC601-8 370mVp-p 0.1V/200n sec. REC/PLAY	3-A IC601-10 5.4Vp-p 2V/10.0m sec. REC/PLAY	4-A IC601-12 5.2Vp-p 1V/200µ sec. REC/PLAY
			
5-A IC601-16 5.1Vp-p 2V/10.0m sec. REC/PLAY	6-A IC601-17 4.7Vp-p 2V/10.0m sec. REC/PLAY	7-A IC601-24 2.6Vp-p 1V/50.0µ sec. REC/PLAY	8-A IC601-26 920mVp-p 0.2V/5.0µ sec. REC/PLAY
			
9-A IC601-27 1Vp-p 0.5V/10.0m sec. REC/PLAY	10-A IC601-29 290mVp-p 0.1V/10.0m sec. REC/PLAY	11-A IC601-30 2.5Vp-p 0.5V/10.0m sec. REC/PLAY	12-A IC601-35 1.8Vp-p 0.5V/20.0µ sec. REC/PLAY
			
13-A IC601-36 1.5Vp-p 0.5V/10.0µ sec. REC/PLAY	14-A IC601-48 5.4Vp-p 2V/10.0m sec. REC/PLAY	15-A IC601-52 5.4Vp-p 2V/10.0m sec. REC/PLAY	16-A IC601-56 2.7Vp-p 1V/10.0m sec. REC/PLAY
			
17-A IC601-58 3.0Vp-p 1V/10.0m sec. REC/PLAY	18-A IC601-59 2.7Vp-p 1V/10.0m sec. REC/PLAY	19-A IC601-60 2.7Vp-p 1V/10.0m sec. REC/PLAY	20-A IC601-61 4.3Vp-p 1V/1.0m sec. REC/PLAY
			
21-A IC601-62 5.4Vp-p 1V/5.0m sec. REC/PLAY	22-A IC602-3 5.4Vp-p 1V/5.0m sec REC/PLAY	23-A IC602-31 780mVp-p 0.2V/10.0m sec. REC/PLAY	24-A IC603-9 2.4Vp-p 0.5V/1.0m sec. REC / PLAY
			
25-A IC603-10 4.4Vp-p 1V/1.0m sec. REC/PLAY	26-A IC603-11 2.3Vp-p 0.5V/1.0m sec. REC/P	27-A IC606-4 4.0Vp-p 1V/10.0m sec. REC/PLAY	28-A IC606-6 4.0Vp-p 1V/10.0m sec. REC/PLAY
			
29-A IC606-8 3.3Vp-p 1V/10.0m sec. REC/PLAY			
			

SSA CIRCUIT BOARD DIAGRAM (SSA)

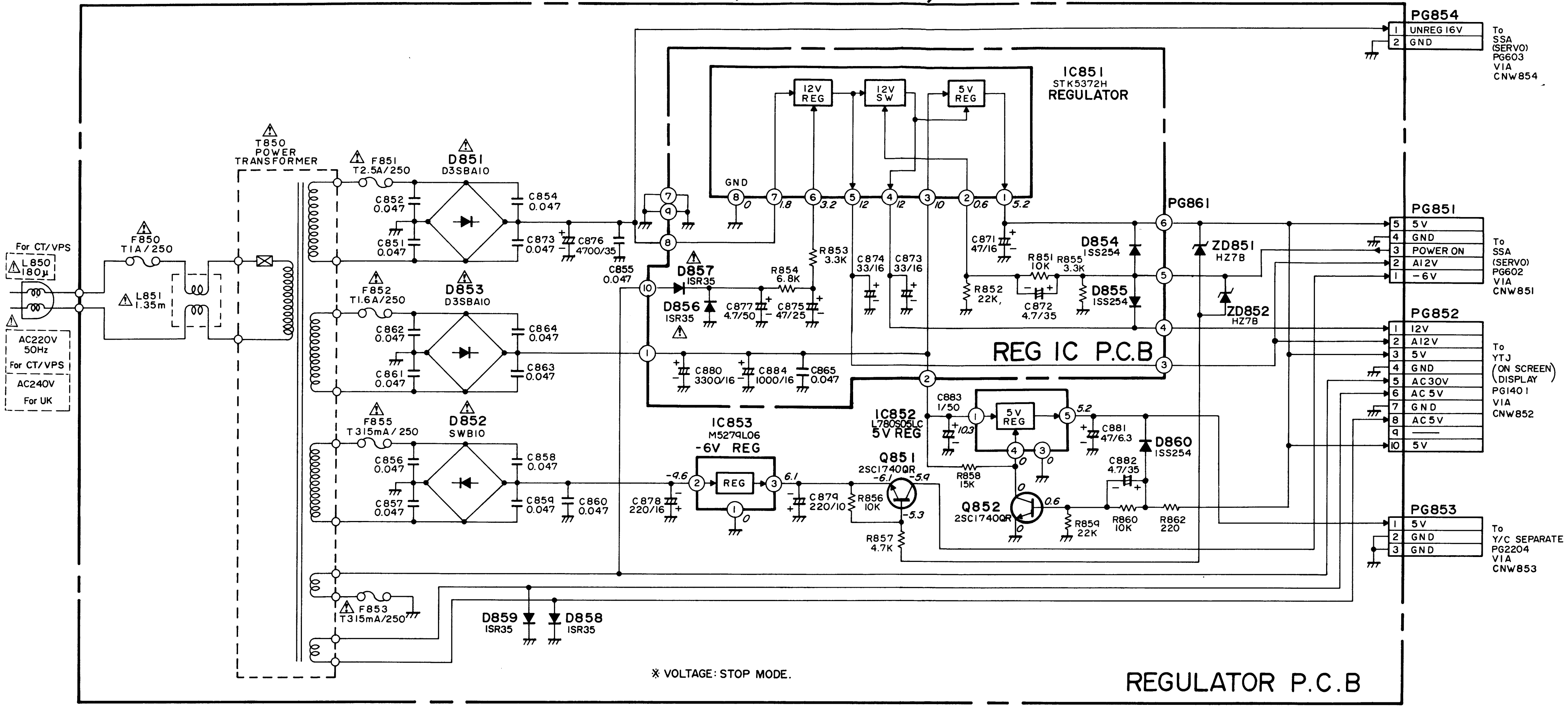

IC603
IC606
IC509
IC507L
IC507R
IC605
IC601
IC501
IC502
IC903
IC504
IC902
IC901
IC602
IC503
3V
E
D
C
B
A
1
2
3
4

※ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODE.

DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5-4	5-6
FRONT SW	5-7	5-7
TIMER/OPERATION SW	5-8	5-10
JACK	5-12	5-24
JACK SUB	5-13	5-22
S-CONNECT(1/2)	5-13	5-34
ON SCREEN DISPLAY	5-14	5-24
OSD SUB	5-15	5-22
FS TUNING	5-16	5-24
PRE/REC AMP	5-17	-
Y	5-18	5-24
S-CONNECT(2/2)	5-18	5-34
CHROMA	5-20	5-24
Y/C SEPARATE	5-26	5-30
INPUT SELECT	5-29	5-30
AUDIO NR	5-32	5-34
FM AUDIO	5-35	5-46
AUDIO I/O	5-36	5-46
SERVO	5-38	5-46
MOTOR DRIVE/TRICK PLAY	5-40	5-46
CAPSTAN MOTOR DRIVE	5-40	-
SENSOR(2/2)	5-41	5-44
SYSTEM CONTROL	5-42	5-46
SENSOR(1/2)	5-43	5-44
REGULATOR	5-48	5-48
REG. IC	5-48	5-49
TUNER UNIT	5-50	-
IF UNIT	5-52	-
RF CONVERTER(For CT)	5-53	-
RF CONVERTER(For VPS)	5-54	-
REMOTE CONTROL	5-55	-

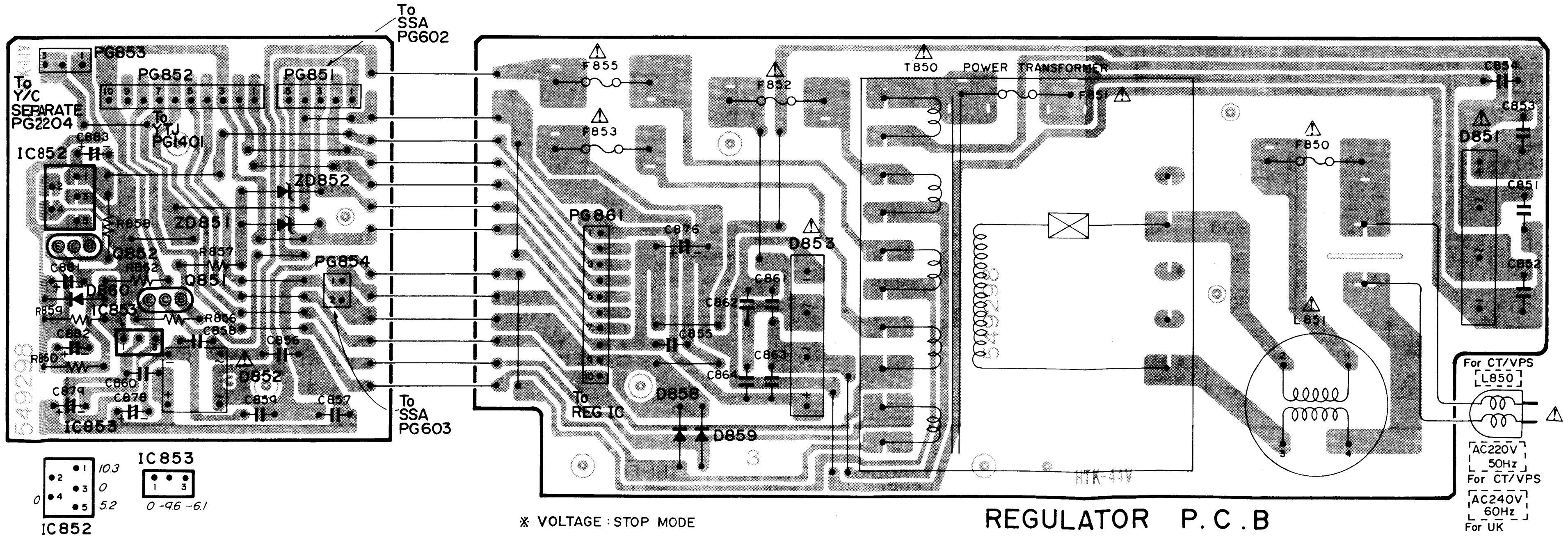

CN513
To YTJ PG1501
To YTJ PG1801
To AUDIO NR PG453
PG553
PG514
To TIMER SUB PG2707
To TIMER SUB PG2708
PG512
PG511
IC509
PG552
To AUDIO NR PG452
IC507R
IC507L
J501R AUDIO IN (R)
J501L AUDIO IN (L)
J502R AUDIO OUT (R)
J502L AUDIO OUT (L)
J504 CAMERA PAUSE
J505 MIC
SP-13A
IC603
To REGULATOR PG851
PG602
To CAPSTAN MOTOR PG005
PG901
To SENSOR PG001
PG603
PG605
To REGULATOR PG854
IC605
IC606
IC601
To PRE/REC AMP CN007
PG507
IC501
IC502
PG503
To AUDIO HEAD CN003
To YTJ PG210
PG906
IC903
To TIMER SUB PG2706
To LOADING MOTOR PG002
PG902
PG903
PG905
To YTJ PG1504
CP504
CP502
CP503
PG551
To AUDIO NR PG451
IC504
IC902
IC901
IC503
To FULL ERASE HEAD CN004
PG504
SP VERTICAL SYNC
LP VERTICAL SYNC
IC602
To Y/C SEPARATE PG2203
To CTL HEAD CN003
PG604
PG606
PG607
To YTJ PG206
To YTJ PG202
PG904
SSA P.C.B
RT622 LP TRACKING PRESET
RT621 SP TRACKING PRESET
RT605 SP SLOW TRACKING PRESET
RT626 LP SLOW TRACKING PRESET
RT625 SP DELAY MM
RT624 LP HEAD SWITCHING POINT
RT623 SP HEAD SWITCHING POINT
RT607 LP SLOW STABILITY
RT606 SP SLOW STABILITY
RT501R Hi-Fi AUDIO PB LEVEL
RT503 DROPOUT LEVEL
RT501L Hi-Fi AUDIO PB LEVEL
RT504 AUDIO BIAS LEVEL
A B C D E
1 2 3 4 5 6 7 8

REGULATOR/REG. IC SCHEMATIC DIAGRAM (REGLER/REGLER IC)


PG854
1 UNREG 16V
2 GND
To SSA (SERVO) PG603 VIA CNW854
IC851 STK5372H REGULATOR
12V REG
12V SW
5V REG
GND
T850 POWER TRANSFORMER
F851 T2.5A/250
D851 D3SBA10
D853 D3SBA10
D852 SWB10
F852 T1.6A/250
F855 T315mA/250
F853 T315mA/250
F850 T1A/250
L850 180μ
L851 1.35m
For CT/VPS
AC220V 50Hz For CT/VPS
AC240V For UK
C852 0.047
C851 0.047
C854 0.047
C873 0.047
C876 4700/35
C855 0.047
C862 0.047
C861 0.047
C864 0.047
C863 0.047
C856 0.047
C857 0.047
C858 0.047
C859 0.047
C860 0.047
D857 ISR35
D856 ISR35
C877 4.7/50
C875 47/25
R854 6.8K
R853 3.3K
C874 33/16
C873 33/16
C871 47/16
R851 10K
R855 3.3K
R852 22K
C872 4.7/35
D854 ISS254
D855 ISS254
ZD851 HZ7B
ZD852 HZ7B
PG861
REG IC P.C.B
C880 3300/16
C884 1000/16
C865 0.047
IC853 M5279L06 -6V REG
REG
C878 220/16
C879 220/10
R856 10K
R857 4.7K
IC852 L78O5OSLC 5V REG
C883 1/50
Q851 2SC1740QR
Q852 2SC1740QR
R858 15K
C881 47/6.3
D860 ISS254
C882 4.7/35
R859 22K
R860 10K
R862 220
D859 ISR35
D858 ISR35
PG851
1 5V
2 GND
3 POWER ON
4 A12V
5 -6V
To SSA (SERVO) PG602 VIA CNW851
PG852
1 12V
2 A12V
3 5V
4 GND
5 AC30V
6 AC 5V
7 GND
8 AC5V
9 —
10 5V
To YTJ (ON SCREEN DISPLAY) PG1401 VIA CNW852
PG853
1 5V
2 GND
3 GND
To Y/C SEPARATE PG2204 VIA CNW853
REGULATOR P.C.B

※ VOLTAGE: STOP MODE.

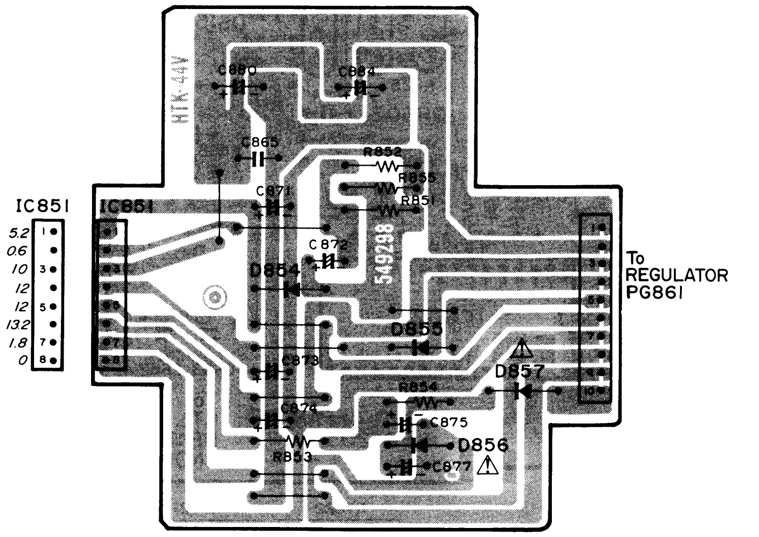
DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5-4	/5-6
FRONT SW	5-7	/5-7
TIMER/OPERATION SW	5-8	/5-10
JACK	5-12	/5-24
JACK SUB	5-13	/5-22
S-CONNECT(1/2)	5-13	/5-34
ON SCREEN DISPLAY	5-14	/5-24
OSD SUB	5-15	/5-22
FS TUNING	5-16	/5-24
PRE/REC AMP	5-17	/ -
Y	5-18	/5-24
S-CONNECT(2/2)	5-18	/5-34
CHROMA	5-20	/5-24
Y/C SEPARATE	5-26	/5-30
INPUT SELECT	5-29	/5-30
AUDIO NR	5-32	/5-34
FM AUDIO	5-35	/5-46
AUDIO I/O	5-36	/5-46
SERVO	5-38	/5-46
MOTOR DRIVE/TRICK PLAY	5-40	/5-46
CAPSTAN MOTOR DRIVE	5-40	/ -
SENSOR(2/2)	5-41	/5-44
SYSTEM CONTROL	5-42	/5-46
SENSOR(1/2)	5-43	/5-44
REGULATOR	5-48	/5-48
REG. IC	5-48	/5-49
TUNER UNIT	5-50	/ -
IF UNIT	5-52	/ -
RF CONVERTER(For CT)	5-53	/ -
RF CONVERTER(For VPS)	5-54	/ -
REMOTE CONTROL	5-55	/ -


To SSA PG602
PG853
PG852
PG851
To Y/C SEPARATE PG2204
To YTJ PG1401
IC852
ZD852
ZD851
Q852
Q851
D860
IC853
D852
PG854
To SSA PG603
F855
F853
F852
T850 POWER TRANSFORMER
F851
F850
D851
D853
PG861
To REG IC
D858
D859
L851
For CT/VPS
L850
AC220V 50Hz For CT/VPS
AC240V 60Hz For UK
IC852
IC853
103
0
52
0 -96 -61

※ VOLTAGE : STOP MODE

REGULATOR P.C.B

REG. IC CIRCUIT BOARD DIAGRAM (REGLER IC)


IC851
5.2
0.6
10
12
12
13.2
1.8
0
To REGULATOR PG861
C880
C884
C865
R852
R855
R851
C871
C872
D854
D855
C873
C874
R854
R853
C875
D856
C877
D857

※ VOLTAGE : STOP MODE

REG IC P.C.B

TUNER UNIT SCHEMATIC DIAGRAM (TUNER－EINHEIT)

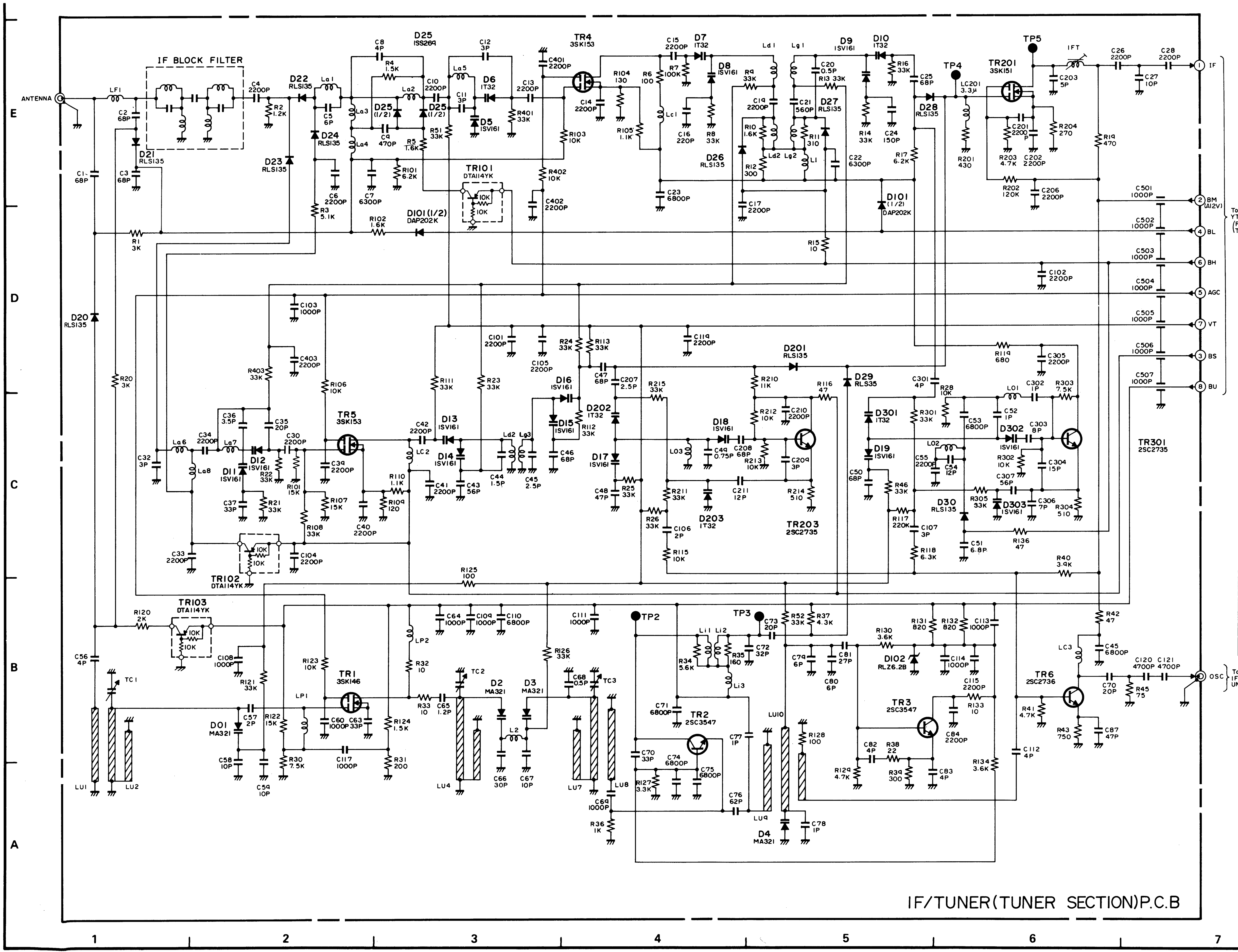
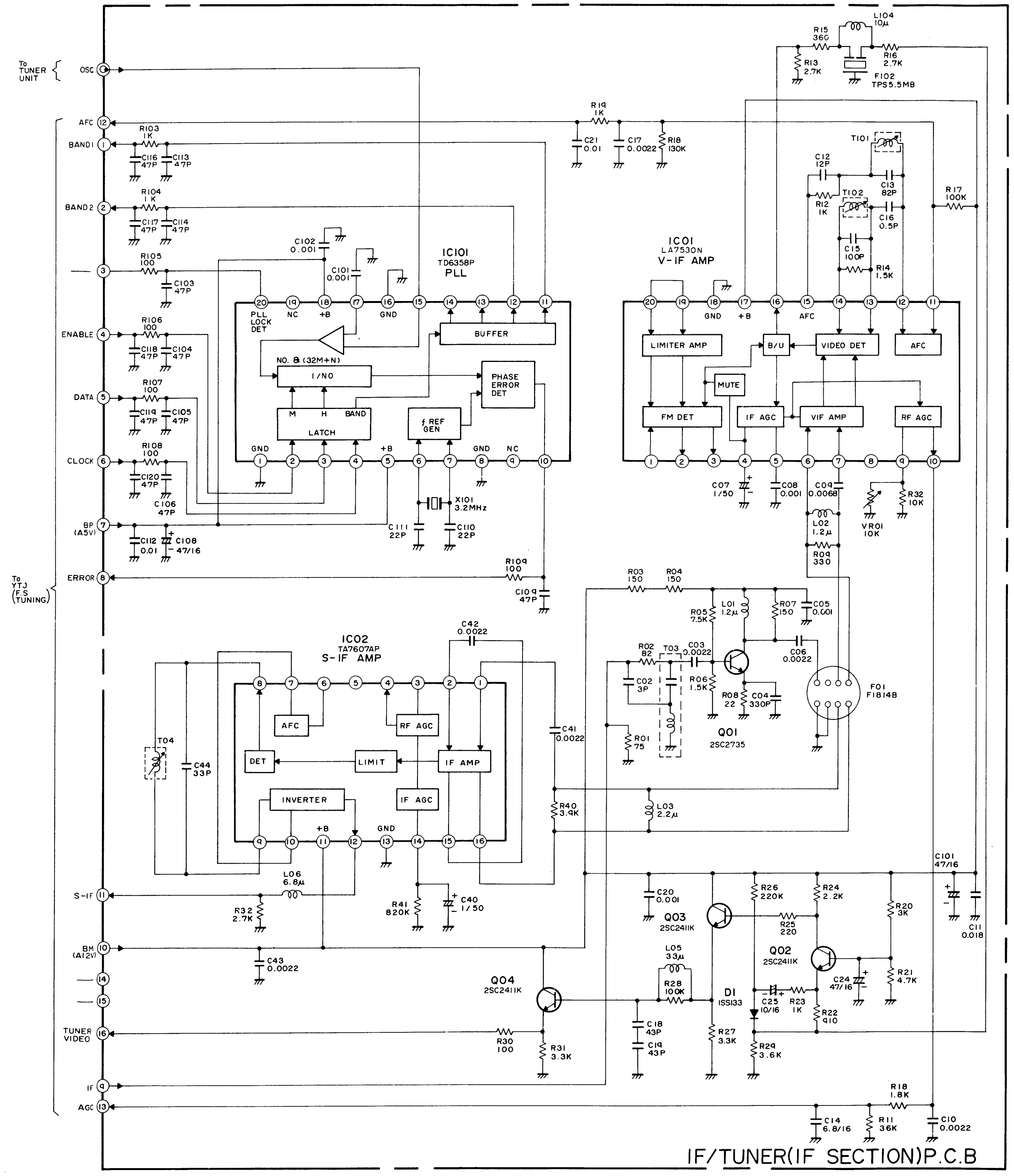
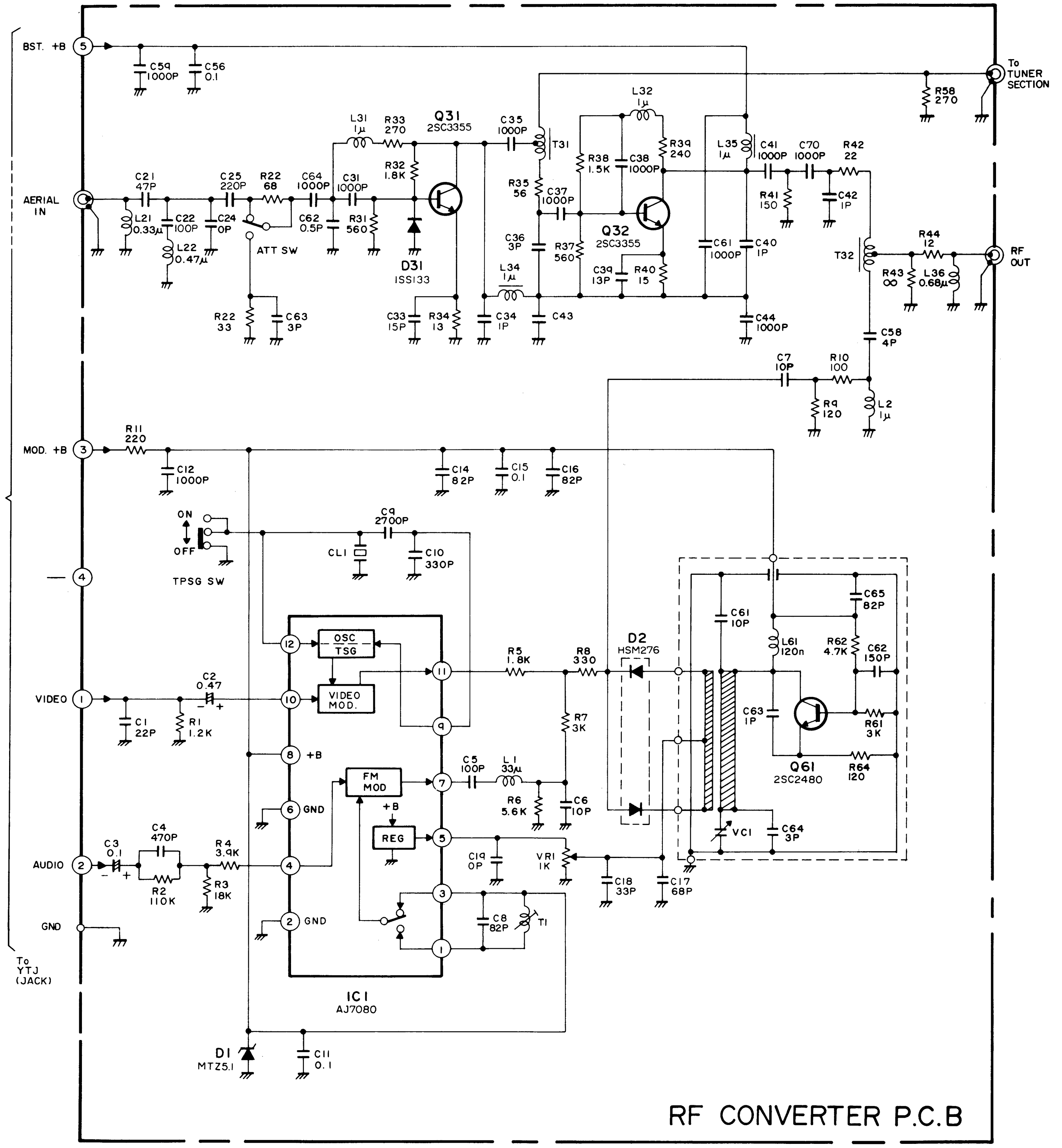

ANTENNA
IF BLOCK FILTER
TR4 3SK153
TR201 3SK151
TR5 3SK153
TR1 3SK146
TR2 2SC3547
TR3 2SC3547
TR6 2SC2736
TR203 2SC2735
TR301 2SC2735
TR101 DTA114YK
TR102 DTA114YK
TR103 DTA114YK
TP2
TP3
TP4
TP5
IFT
① IF
② BM (A12V)
④ BL
⑥ BH
⑤ AGC
⑦ VT
③ BS
⑧ BU
To YTJ (F.S TUNING)
OSC
To IF UNIT
IF/TUNER(TUNER SECTION)P.C.B
E
D
C
B
A
1
2
3
4
5
6
7
8

DIAGRAM CONFIGURATION	SCHEMATIC	CIRCUIT BOARD
TIMER SUB	5－4	／5－8
FRONT SW	5－7	／5－7
TIMER／OPERATION SW	5－8	／5－10
JACK	5－12	／5－24
JACK SUB	5－13	／5－22
S－CONNECT(1／2)	5－13	／5－34
ON SCREEN DISPLAY	5－14	／5－24
OSD SUB	5－15	／5－22
FS TUNING	5－16	／5－24
PRE／REC AMP	5－17	／ －
Y	5－18	／5－24
S－CONNECT(2／2)	5－18	／5－34
CHROMA	5－20	／5－24
Y／C SEPARATE	5－26	／5－30
INPUT SELECT	5－29	／5－30
AUDIO NR	5－32	／5－34
FM AUDIO	5－35	／5－46
AUDIO I／O	5－36	／5－46
SERVO	5－38	／5－46
MOTOR DRIVE／TRICK PLAY	5－40	／5－46
CAPSTAN MOTOR DRIVE	5－40	／ －
SENSOR(2／2)	5－41	／5－44
SYSTEM CONTROL	5－42	／5－46
SENSOR(1／2)	5－43	／5－44
REGULATOR	5－48	／5－48
REG. IC	5－48	／5－49
TUNER UNIT	5－50	／ －
IF UNIT	5－52	／ －
RF CONVERTER(For CT)	5－53	／ －
RF CONVERTER(For VPS)	5－54	／ －
REMOTE CONTROL	5－55	／ －

IF UNIT SCHEMATIC DIAGRAM (ZF—EINHEIT)


To TUNER UNIT
OSC 15
AFC 12
BAND1 1
BAND2 2
3
ENABLE 4
DATA 5
CLOCK 6
BP (A5V) 7
ERROR 8
To YTJ (F.S TUNING)
S-IF 11
BM (A12V) 10
14
15
TUNER VIDEO 16
IF 9
AGC 13
R103 1K
C116 47P
C113 47P
R104 1K
C117 47P
C114 47P
R105 100
C103 47P
R106 100
C118 47P
C104 47P
R107 100
C119 47P
C105 47P
R108 100
C120 47P
C106 47P
C112 0.01
C108 47/16
C102 0.001
C101 0.001
IC101 TD6358P PLL
PLL LOCK DET
NC
+B
GND
BUFFER
NO. Ø (32M+N)
1/NO
PHASE ERROR DET
LATCH
M
H
BAND
f REF GEN
X101 3.2MHz
C111 22P
C110 22P
R109 100
C109 47P
R19 1K
C21 0.01
C17 0.0022
R18 130K
R15 360
L104 10μ
R13 2.7K
R16 2.7K
F102 TPS5.5MB
T101
C12 12P
R12 1K
T102
C13 82P
C16 0.5P
C15 100P
R14 1.5K
R17 100K
IC01 LA7530N V-IF AMP
LIMITER AMP
B/U
VIDEO DET
AFC
MUTE
FM DET
IF AGC
VIF AMP
RF AGC
C07 1/50
C08 0.001
C09 0.0068
L02 1.2μ
R09 330
VR01 10K
R32 10K
R03 150
R04 150
R05 7.5K
L01 1.2μ
R07 150
C05 0.001
R02 82
T03
C03 0.0022
C02 3P
R06 1.5K
R01 75
R08 22
C04 330P
C06 0.0022
Q01 2SC2735
F01 F1814B
IC02 TA7607AP S-IF AMP
C42 0.0022
AFC
RF AGC
DET
LIMIT
IF AMP
INVERTER
IF AGC
T04
C44 33P
C41 0.0022
R40 3.9K
L03 2.2μ
L06 6.8μ
R32 2.7K
R41 820K
C40 1/50
C43 0.0022
C20 0.001
Q03 2SC2411K
R26 220K
R25 220
R24 2.2K
Q02 2SC2411K
R20 3K
C101 47/16
C11 0.018
R21 4.7K
C24 47/16
L05 33μ
R28 100K
D1 1SS133
C25 10/16
R23 1K
R22 910
Q04 2SC2411K
C18 43P
C19 43P
R27 3.3K
R29 3.6K
R30 100
R31 3.3K
R18 1.8K
C14 6.8/16
R11 36K
C10 0.0022
IF/TUNER(IF SECTION)P.C.B

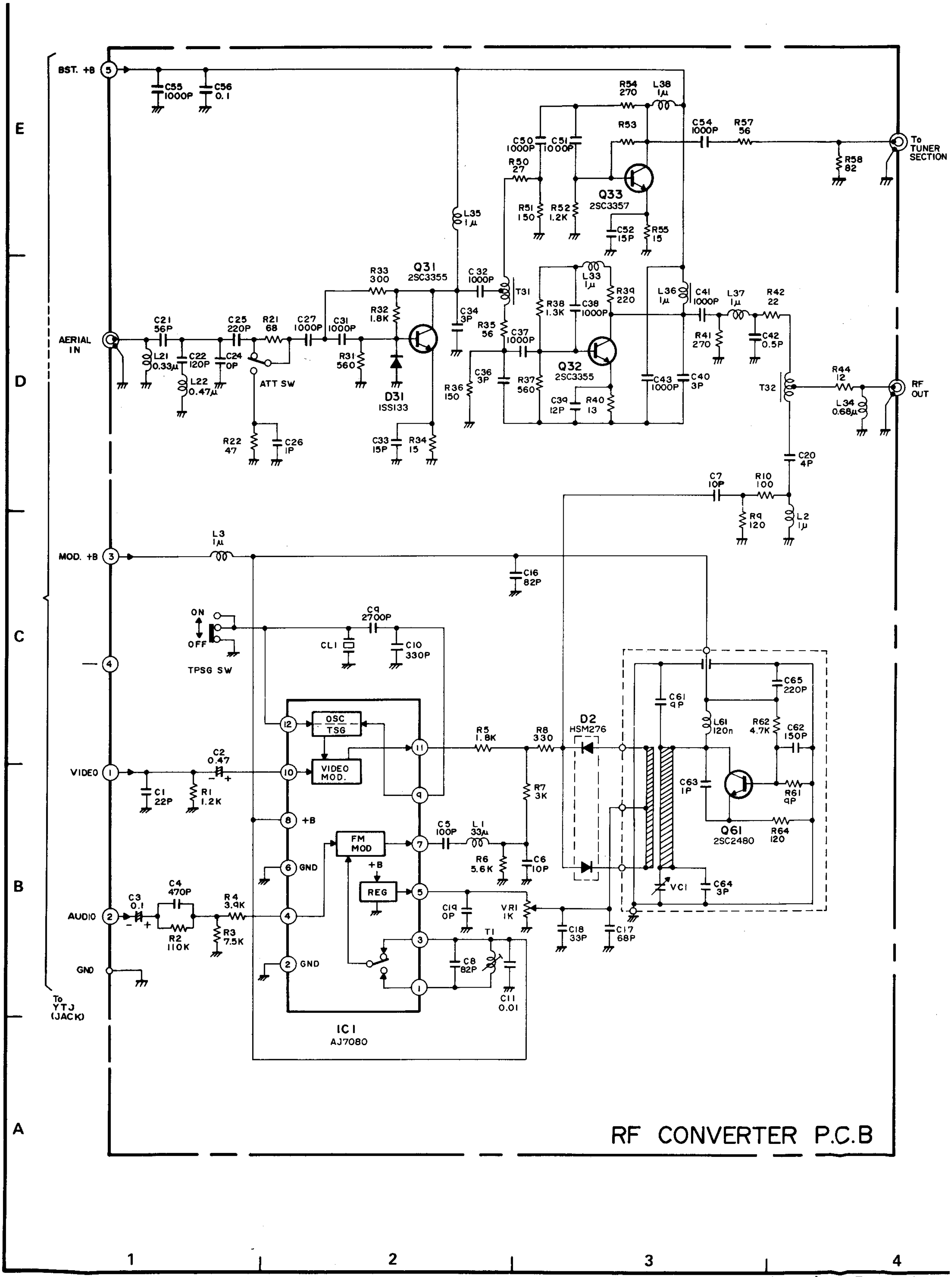
RF CONVERTER SCHEMATIC DIAGRAM For CT (HF—KONVERTER Für CT)


BST. +B 5
C59 1000P
C56 0.1
To TUNER SECTION
R58 270
L32 1μ
L31 1μ
R33 270
Q31 2SC3355
C35 1000P
T31
R38 1.5K
C38 1000P
R39 240
L35 1μ
C41 1000P
C70 1000P
R42 22
AERIAL IN
C21 47P
C25 220P
R22 68
C64 1000P
C31 1000P
R32 1.8K
R35 56
C37 1000P
Q32 2SC3355
R41 150
C42 1P
L21 0.33μ
C22 100P
C24 0P
C62 0.5P
R31 560
L22 0.47μ
ATT SW
D31 1SS133
C36 3P
R37 560
C39 13P
R40 15
C61 1000P
C40 1P
T32
R44 12
R43 ∞
L36 0.68μ
RF OUT
R22 33
C63 3P
C33 15P
R34 13
L34 1μ
C34 1P
C43
C44 1000P
C58 4P
C7 10P
R10 100
R9 120
L2 1μ
MOD. +B 3
R11 220
C12 1000P
C14 82P
C15 0.1
C16 82P
ON
OFF
TPSG SW
C9 2700P
CL1
C10 330P
4
OSC TSG
VIDEO MOD.
FM MOD
+B
REG
R5 1.8K
R8 330
D2 HSM276
C61 10P
C65 82P
L61 120n
R62 4.7K
C62 150P
C63 1P
Q61 2SC2480
R61 3K
R64 120
VC1
C64 3P
VIDEO 1
C2 0.47
C1 22P
R1 1.2K
R7 3K
C5 100P
L1 33μ
R6 5.6K
C6 10P
C19 0P
VR1 1K
C18 33P
C17 68P
AUDIO 2
C3 0.1
C4 470P
R4 3.9K
R2 110K
R3 18K
GND
To YTJ (JACK)
C8 82P
T1
IC1 AJ7080
D1 MTZ5.1
C11 0.1
RF CONVERTER P.C.B

E
D
C
B
A

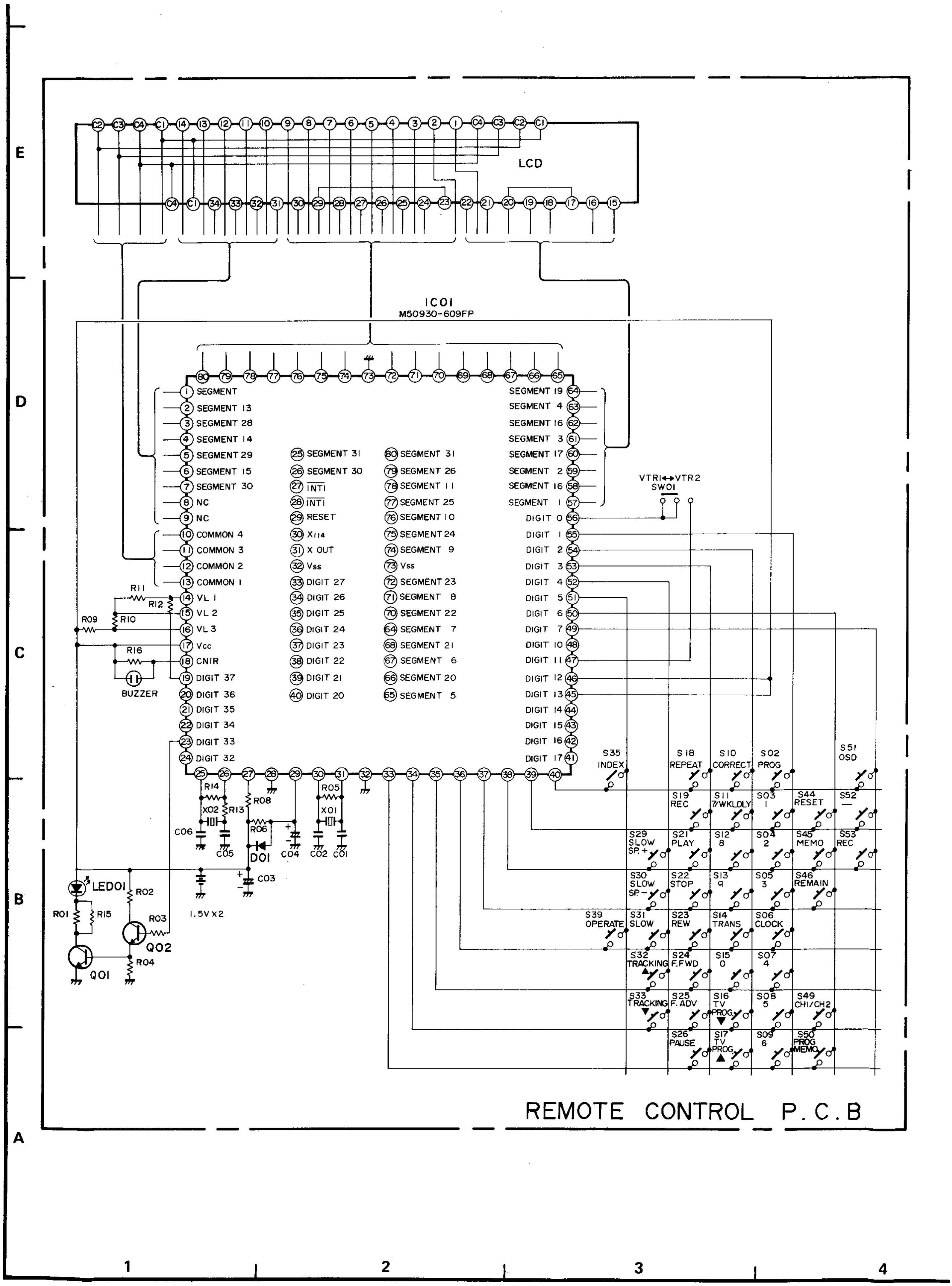
1 2 3 4 5 6 7 8

RF CONVERTER SCHEMATIC DIAGRAM For VPS
(HF－KONVERTER Für VPS)



E
D
C
B
A
1
2
3
4
BST. +B
5
C55 1000P
C56 0.1
R54 270
L38 1μ
R53
C54 1000P
R57 56
To TUNER SECTION
R58 82
C50 1000P
C51 1000P
R50 27
Q33 2SC3357
R51 150
R52 1.2K
C52 15P
R55 15
L35 1μ
Q31 2SC3355
R33 300
C32 1000P
T31
L33 1μ
R39 220
R38 1.3K
C38 1000P
L36 1μ
C41 1000P
L37 1μ
R42 22
AERIAL IN
C21 56P
C25 220P
R21 68
C27 1000P
C31 1000P
R32 1.8K
C34 3P
R35 56
C37 1000P
R41 270
C42 0.5P
L21 0.33μ
C22 120P
C24 0P
L22 0.47μ
ATT SW
R31 560
D31 1SS133
C36 3P
R36 150
R37 560
Q32 2SC3355
C39 12P
R40 13
C43 1000P
C40 3P
T32
R44 12
RF OUT
L34 0.68μ
R22 47
C26 1P
C33 15P
R34 15
C20 4P
C7 10P
R10 100
R9 120
L2 1μ
MOD. +B
3
L3 1μ
C16 82P
ON
OFF
TPSG SW
C9 2700P
CL1
C10 330P
4
C61 9P
C65 220P
L61 120n
R62 4.7K
C62 150P
12
OSC
TSG
11
R5 1.8K
R8 330
D2 HSM276
VIDEO
1
C2 0.47
10
VIDEO MOD.
9
R7 3K
C63 1P
R61 9P
C1 22P
R1 1.2K
8
+B
Q61 2SC2480
R64 120
FM MOD
C5 100P
L1 33μ
7
R6 5.6K
C6 10P
6
GND
+B
REG
VC1
C64 3P
AUDIO
2
C3 0.1
C4 470P
R4 3.9K
R2 110K
R3 7.5K
C19 0P
VR1 1K
C18 33P
C17 68P
GND
T1
C8 82P
C11 0.01
To YTJ (JACK)
IC1 AJ7080
RF CONVERTER P.C.B

REMOTE CONTROL SCHEMATIC DIAGRAM (FERNBEDIENUNG)


E
D
C
B
A
1
2
3
4
LCD
C2 C3 C4 C1 14 13 12 11 10 9 8 7 6 5 4 3 2 1 C4 C3 C2 C1
C4 C1 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15
IC01
M50930-609FP
80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65
1 SEGMENT
2 SEGMENT 13
3 SEGMENT 28
4 SEGMENT 14
5 SEGMENT 29
6 SEGMENT 15
7 SEGMENT 30
8 NC
9 NC
10 COMMON 4
11 COMMON 3
12 COMMON 2
13 COMMON 1
14 VL 1
15 VL 2
16 VL 3
17 Vcc
18 CNIR
19 DIGIT 37
20 DIGIT 36
21 DIGIT 35
22 DIGIT 34
23 DIGIT 33
24 DIGIT 32
25 SEGMENT 31
26 SEGMENT 30
27 INT1
28 INT1
29 RESET
30 X114
31 X OUT
32 Vss
33 DIGIT 27
34 DIGIT 26
35 DIGIT 25
36 DIGIT 24
37 DIGIT 23
38 DIGIT 22
39 DIGIT 21
40 DIGIT 20
80 SEGMENT 31
79 SEGMENT 26
78 SEGMENT 11
77 SEGMENT 25
76 SEGMENT 10
75 SEGMENT 24
74 SEGMENT 9
73 Vss
72 SEGMENT 23
71 SEGMENT 8
70 SEGMENT 22
64 SEGMENT 7
68 SEGMENT 21
67 SEGMENT 6
66 SEGMENT 20
65 SEGMENT 5
SEGMENT 19 64
SEGMENT 4 63
SEGMENT 16 62
SEGMENT 3 61
SEGMENT 17 60
SEGMENT 2 59
SEGMENT 16 58
SEGMENT 1 57
DIGIT 0 56
DIGIT 1 55
DIGIT 2 54
DIGIT 3 53
DIGIT 4 52
DIGIT 5 51
DIGIT 6 50
DIGIT 7 49
DIGIT 10 48
DIGIT 11 47
DIGIT 12 46
DIGIT 13 45
DIGIT 14 44
DIGIT 15 43
DIGIT 16 42
DIGIT 17 41
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
VTR1↔VTR2
SW01
R11
R12
R09
R10
R16
BUZZER
R14
X02
R13
R08
R06
D01
R05
X01
C06
C05
C04
C02
C01
C03
1.5V x2
LED01
R02
R01
R15
R03
Q02
Q01
R04
S35 INDEX
S18 REPEAT
S10 CORRECT
S02 PROG
S51 OSD
S19 REC
S11 7/WKLDLY
S03 1
S44 RESET
S52 —
S29 SLOW SP.+
S21 PLAY
S12 8
S04 2
S45 MEMO
S53 REC
S30 SLOW SP.−
S22 STOP
S13 9
S05 3
S46 REMAIN
S39 OPERATE
S31 SLOW
S23 REW
S14 TRANS
S06 CLOCK
S32 TRACKING ▲
S24 F.FWD
S15 0
S07 4
S33 TRACKING ▼
S25 F.ADV
S16 TV PROG ▼
S08 5
S49 CH1/CH2
S26 PAUSE
S17 TV PROG ▲
S09 6
S50 PROG MEMO
REMOTE CONTROL P.C.B

REPLACEMENT PARTS LIST (ERSATZTEILLISTE)
ELECTRICAL PARTS LIST (LISTE DER ELEKTRISCHEN TEILE)

SYMBOL-NO	P-NO	DESCRIPTION
		CAPACITORS
C 202	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 204	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 205	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 206	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 210	0890017	CERAMIC DISC 47PF+-5% 50V
C 211	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 219	0256836	ELECTROLYTIC 2.2UF 35V
C 221	0256838	ELECTROLYTIC 10UF 10V
C 225	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 226	0890045	CERAMIC DISC 0.047UF+80%-20% 50V
C 227	0256676	ELECTROLYTIC 47UF 10V
C 229	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 230	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 232	0890024	CERAMIC DISC 150PF+-10% 50V
C 237	0890019	CERAMIC DISC 680PF+-50% 50V
C 239	0890012	CERAMIC DISC 18PF+-5% 50V
C 240	0890011	CERAMIC DISC 15PF+-5% 50V
C 243	0890015	CERAMIC DISC 33PF+-50% 50V
C 244	0890024	CERAMIC DISC 150PF+-10% 50V
C 245	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 246	0256298	ELECTROLYTIC 47UF 6.3V
C 247	0890023	CERAMIC DISC 120PF+-10% 50V
C 258	0256676	ELECTROLYTIC 47UF 6.3V
C 260	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 263	0256627	ELECTROLYTIC 47UF 16V
C 264	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 265	0890023	CERAMIC DISC 120PF+-10% 50V
C 266	0256617	ELECTROLYTIC 22UF 10V
C 267	0256614	ELECTROLYTIC 10UF 16V
C 268	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 269	0890013	CERAMIC DISC 22PF+-5% 50V
C 270	0890018	CERAMIC DISC 56PF+-50% 50V
C 271	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 272	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 275	0890014	CERAMIC DISC 27PF+-50% 50V
C 277	0256614	ELECTROLYTIC 10UF 16V
C 301	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 314	0256781	ELECTROLYTIC 470UF 6.3V
C 318	0256781	ELECTROLYTIC 470UF 6.3V
C 319	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 321	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 322	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 324	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 325	0890011	CERAMIC DISC 15PF+-5% 50V
C 326	0890045	CERAMIC DISC 0.047UF+80%-20% 50V
C 327	0890045	CERAMIC DISC 0.047UF+80%-20% 50V
C 330	0890018	CERAMIC DISC 56PF+-50% 50V
C 331	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 351	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 354	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 355	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 357	0890007	CERAMIC DISC 8.2PF+-10% 50V
C 409L	0890008	CERAMIC DISC 10PF+-5% 50V
C 409R	0890008	CERAMIC DISC 10PF+-5% 50V
C 419	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 420	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 422	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 503	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 504	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 512	0890031	CERAMIC DISC 470PF+-10% 50V
C 513	0890038	CERAMIC DISC 3300PF+-20% 16V
C 516	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 519	0890041	CERAMIC DISC 6800PF+-20% 16V
C 524L	0208526	CERAMIC DISC 560PF+-5% 50V
C 524R	0208526	CERAMIC DISC 560PF+-5% 50V
C 526L	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 526R	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 527	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 528L	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 528R	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 531	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 532	0890028	CERAMIC DISC 330PF+-10% 50V
C 534	0890028	CERAMIC DISC 330PF+-10% 50V
C 535	0208694	CERAMIC DISC 270PF+-5% 50V
C 539	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 547	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 549	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 551	0890033	CERAMIC DISC 680PF+-10% 50V
C 553	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 558	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 560	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 568L	0890015	CERAMIC DISC 33PF+-50% 50V
C 568R	0890015	CERAMIC DISC 33PF+-50% 50V
C 571	0208526	CERAMIC DISC 560PF+-5% 50V
C 572	0890022	CERAMIC DISC 100PF+-10% 50V
C 573	0890035	CERAMIC DISC 1000PF+-10% 50V
C 574	0890035	CERAMIC DISC 1000PF+-10% 50V
C 575	0890035	CERAMIC DISC 1000PF+-10% 50V
C 576	0890035	CERAMIC DISC 1000PF+-10% 50V
C 578	0890102	CERAMIC DISC 0.022UF+80-20% 50V
C 580	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 601	0890035	CERAMIC DISC 1000PF+-10% 50V
C 602	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 603	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 605	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 610	0256364	ELECTROLYTIC 0.47UF 35V
C 611	0256364	ELECTROLYTIC 0.47UF 35V
C 617	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 622	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 627	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 633	0890036	CERAMIC DISC 1500PF+-20% 16V
C 638	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 646	0890039	CERAMIC DISC 4700PF+-20% 16V
C 647	0890039	CERAMIC DISC 4700PF+-20% 16V
C 648	0890039	CERAMIC DISC 4700PF+-20% 16V
C 649	0890039	CERAMIC DISC 4700PF+-20% 16V
C 656	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 701	0256489	ELECTROLYTIC 0.047F 5.5V
C 702	0256160	ELECTROLYTIC 47UF 6.3V
C 703	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 704	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 705	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 709	0256153	ELECTROLYTIC 3.3MF 50V
C 710	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 711	0256160	ELECTROLYTIC 47UF 6.3V
C 713	0256150	ELECTROLYTIC 0.47UF 50V
C 714	0256164	ELECTROLYTIC 0.1UF 50V
C 715	0256160	ELECTROLYTIC 47UF 6.3V
C 716	5058562	TRIMMER 20PF
C 718	0256731	ELECTROLYTIC 220UF 6.3V
C 772	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 773	0256155	ELECTROLYTIC 10UF 16V
C 774	0239375	CERAMIC DISC 22000PF+80-20% 25V
C 832	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 834	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 836	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 838	0890043	CERAMIC DISC 0.01UF+-20% 16V

SYMBOL—NO	P—NO	DESCRIPTION
C 840	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 842	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 844	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 876	0256888	ELECTROLYTIC 4700UF 35V
C 878	0256603	ELECTROLYTIC 220UF 16V
C 880	0256873	ELECTROLYTIC 3300UF 16V
C 884	0256859	ELECTROLYTIC 1000UF 16V
C 902	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 903	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 906	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 907	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 908	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 912	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 913	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 915	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 916	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C 918	0890043	CERAMIC DISC 0.01UF+-20% 16V
C 921	0890022	CERAMIC DISC 100PF+-10% 50V
C 922	0890022	CERAMIC DISC 100PF+-10% 50V
C 925	0890015	CERAMIC DISC 33PF+-50% 50V
C 926	0890015	CERAMIC DISC 33PF+-50% 50V
C1251	0890032	CERAMIC 560PF+-10% 50V
C1252	0890027	CERAMIC DISC 270PF+-10% 50V
C1409	0890015	CERAMIC DISC 33PF+-50% 50V
C1424	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1437	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1439	0208042	CERAMIC DISC 33PF+-5% 50V
C1491	0209171	CERAMIC DISC 0.01UF+80-20% 50V
C1492	0209171	CERAMIC DISC 0.01UF+80-20% 50V
C1493	0209171	CERAMIC DISC 0.01UF+80-20% 50V
C1495	0890043	CERAMIC DISC 0.01UF+-20% 16V
C1496	0890043	CERAMIC DISC 0.01UF+-20% 16V
C1501	0890035	CERAMIC DISC 1000PF+-10% 50V
C1502	0890035	CERAMIC DISC 1000PF+-10% 50V
C1503	0890035	CERAMIC DISC 1000PF+-10% 50V
C1504	0890035	CERAMIC DISC 1000PF+-10% 50V
C1505	0256626	ELECTROLYTIC 47UF 6.3V
C1508	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1512	0890043	CERAMIC DISC 0.01UF+-20% 16V
C1513	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1515	0890017	CERAMIC DISC 47PF+-5% 50V
C1517	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1520	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1522	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1523	0256627	ELECTROLYTIC 47UF 16V
C1528	0209173	CERAMIC DISC 0.022UF+-10% 50V
C1551	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C1554	0890043	CERAMIC DISC 0.01UF+-20% 16V
C2201	0201037	CERAMIC CHIP 330PF+-5% 50V
C2202	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2203	0201095	CERAMIC CHIP 68PF+-5% 50V
C2206	0201024	CERAMIC CHIP 27PF+-5% 50V
C2209	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2210	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2211	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2212	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2213	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2214	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2215	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2216	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2218	0256161	ELECTROLYTIC 22UF 6.3V
C2221	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2222	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2223	0201032	CERAMIC CHIP 120PF+-5% 50V
C2225	0201006	CERAMIC CHIP 0.01UF+80-20% 50V

SYMBOL—NO	P—NO	DESCRIPTION
C2226	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2231	0201027	CERAMIC CHIP 47PF+-5% 50V
C2233	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2235	0201001	CERAMIC CHIP 22PF+-5% 50V
C2238	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2239	0256842	ELECTROLYTIC 22UF 16V
C2244	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2260	0201020	CERAMIC CHIP 10PF+-0.5% 50V
C2303	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2306	0201024	CERAMIC CHIP 27PF+-5% 50V
C2309	0201006	CERAMIC CHIP 0.01UF+80-20% 50V
C2311	0201068	CERAMIC CHIP 0.033UF+80-20% 25V
C2312	0201037	CERAMIC CHIP 330PF+-5% 50V
C2316	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2323	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2324	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2326	0201009	CERAMIC CHIP 0.022UF+80-20% 25V
C2327	0201026	CERAMIC CHIP 39PF+-5% 50V
C2328	0201022	CERAMIC CHIP 15PF+-5% 50V
C2331	0201035	CERAMIC CHIP 220PF+-5% 50V
C2340	0201030	CERAMIC CHIP 82PF+-5% 50V
C2701	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C2705	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C2706	0256160	ELECTROLYTIC 47UF 6.3V
C2708	0890011	CERAMIC DISC 15PF+-5% 50V
C2709	0890011	CERAMIC DISC 15PF+-5% 50V
		RESISTORS
R 574	0170471	FUSE RESISTOR 2.2OHM+-5% 1/4W
R2202	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2204	0103861	CHIP RESISTOR 33KOHM+-5% 0.1W
R2205	0103860	CHIP RESISTOR 27KOHM+-5% 0.1W
R2206	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2207	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2208	0103834	CHIP RESISTOR 180OHM+-5% 0.1W
R2209	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2210	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2211	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2212	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R2213	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R2214	0103880	CHIP RESISTOR 1.5MOHM+-10% 0.1W
R2215	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R2216	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2217	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2218	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2219	0103844	CHIP RESISTOR 1.2KOHM+-5% 0.1W
R2220	0103848	CHIP RESISTOR 2.7KOHM+-5% 0.1W
R2221	0103849	CHIP RESISTOR 3.3KOHM+-5% 0.1W
R2222	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2223	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R2224	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2225	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2226	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R2227	0103842	CHIP RESISTOR 820OHM+-5% 0.1W
R2228	0103842	CHIP RESISTOR 820OHM+-5% 0.1W
R2229	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R2230	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2231	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2232	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2233	0103834	CHIP RESISTOR 180OHM+-5% 0.1W
R2234	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2235	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R2236	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R2237	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W

SYMBOL–NO	P–NO	DESCRIPTION
R2238	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2239	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2240	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R2241	0103837	CHIP RESISTOR 330OHM+-5% 0.1W
R2242	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2243	0103839	CHIP RESISTOR 470OHM+-5% 0.1W
R2244	0103848	CHIP RESISTOR 2.7KOHM+-5% 0.1W
R2245	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R2246	0103844	CHIP RESISTOR 1.2KOHM+-5% 0.1W
R2247	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R2248	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2249	0103837	CHIP RESISTOR 330OHM+-5% 0.1W
R2250	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R2251	0103856	CHIP RESISTOR 12KOHM+-5% 0.1W
R2252	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R2253	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2254	0103839	CHIP RESISTOR 470OHM+-5% 0.1W
R2259	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2260	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2261	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R2262	0103831	CHIP RESISTOR 100OHM+-5% 0.1W
R2263	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2264	0103864	CHIP RESISTOR 56KOHM+-5% 0.1W
R2265	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2266	0103854	CHIP RESISTOR 8.2KOHM+-5% 0.1W
R2267	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2268	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2269	0103858	CHIP RESISITOR 18KOHM+-5% 0.1W
R2270	0103844	CHIP RESISTOR 1.2KOHM+-5% 0.1W
R2271	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R2272	0103842	CHIP RESISTOR 820OHM+-5% 0.1W
R2273	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2274	0103842	CHIP RESISTOR 820OHM+-5% 0.1W
R2275	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2276	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R2277	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2278	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R2279	0103844	CHIP RESISTOR 1.2KOHM+-5% 0.1W
R2280	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2301	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2302	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R2303	0103849	CHIP RESISTOR 3.3KOHM+-5% 0.1W
R2304	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R2305	0103870	CHIP RESISTOR 180KOHM+-5% 0.1W
R2306	0103835	CHIP RESISTOR 220OHM+-5% 0.1W
R2307	0103866	CHIP RESISTOR 82KOHM+-5% 0.1W
R2308	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R2309	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2310	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2311	0103831	CHIP RESISTOR 100OHM+-5% 0.1W
R2312	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R2313	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R2314	0103837	CHIP RESISTOR 330OHM+-5% 0.1W
R2315	0103848	CHIP RESISTOR 2.7KOHM+-5% 0.1W
R2316	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R2319	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2320	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2321	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R2322	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2323	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2324	0103875	CHIP RESISTOR 470KOHM+-5% 0.1W
R2325	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2326	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2328	0103838	CHIP RESISTOR 390OHM+-5% 0.1W
R2330	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W

SYMBOL–NO	P–NO	DESCRIPTION
R2331	0103832	CHIP RESISTOR 120OHM+-5% 0.1W
R2332	0103832	CHIP RESISTOR 120OHM+-5% 0.1W
RT 201	5030004	SEMI VARIABLE 1KOHM
RT 301	5030005	SEMI VARIABLE 2.2KOHM
RT 351	5030003	SEMI VARIABLE 470OHM
RT 501L	5035031	SEMI VARIABLE 100KOHM
RT 501R	5035031	SEMI VARIABLE 100KOHM
RT 503	5035029	SEMI VARIABLE 47KOHM
RT 504	5035031	SEMI VARIABLE 100KOHM
RT 605	5030013	SEMI VARIABLE 470KOHM
RT 606	5030009	SEMI VARIABLE 47KOHM
RT 607	5030011	SEMI VARIABLE 100KOHM
RT 621	5030012	SEMI VARIABLE 220KOHM
RT 622	5030012	SEMI VARIABLE 220KOHM
RT 623	5030013	SEMI VARIABLE 470KOHM
RT 624	5030013	SEMI VARIABLE 470KOHM
RT 625	5030011	SEMI VARIABLE 100KOHM
RT 626	5030013	SEMI VARIABLE 470KOHM
RT2201	5035023	VARIABLE 470OHM
RT2205	5035024	SEMI VARIABLE 1KOHM
RT2304	5035029	SEMI VARIABLE 47KOHM
RT2305	5035026	SEMI VARIABLE 4.7KOHM
RT2306	5035026	SEMI VARIABLE 4.7KOHM
RV 501	5009147	VARIABLE 50KOHM
RV 502	5009147	VARIABLE 50KOHM
RV 701	5009116	VARIABLE 10KOHM
RV 703	5009114	RESISTOR VARIABLE 500KOHM
RV 704	5005575	RESISTOR VARIABLE 10KOHMX2
RV 705	5020222	SEMI VARIABLE 100KOHM
		SEMI-CONDUCTORS
D 141	5380933	LED GL-451
D 202	5339231	DIODE 1SR35-100A
D 203	5339131	DIODE 1SS254
D 204	5339131	DIODE 1SS254
D 205	5339131	DIODE 1SS254
D 206	5339131	DIODE 1SS254
D 208	5339131	DIODE 1SS254
D 209	5339131	DIODE 1SS254
D 210	5339131	DIODE 1SS254
D 211	5339131	DIODE 1SS254
D 301	5339131	DIODE 1SS254
D 302	5339131	DIODE 1SS254
D 401	5339131	DIODE 1SS254
D 503	5339131	DIODE 1SS254
D 504	5339131	DIODE 1SS254
D 505	5339131	DIODE 1SS254
D 507	5339131	DIODE 1SS254
D 508	5339131	DIODE 1SS254
D 509	5339131	DIODE 1SS254
D 510	5339131	DIODE 1SS254
D 511	5339131	DIODE 1SS254
D 513	5339131	DIODE 1SS254
D 601	5339131	DIODE 1SS254
D 602	5339131	DIODE 1SS254
D 603	5339131	DIODE 1SS254
D 604	5339131	DIODE 1SS254
D 605	5339131	DIODE 1SS254
D 606	5339131	DIODE 1SS254
D 607	5339131	DIODE 1SS254
D 608	5339131	DIODE 1SS254
D 609	5339131	DIODE 1SS254
D 610	5339131	DIODE 1SS254
D 611	5339131	DIODE 1SS254

SYMBOL–NO	P–NO	DESCRIPTION
D 612	5339131	DIODE 1SS254
D 614	5339131	DIODE 1SS254
D 615	5339131	DIODE 1SS254
D 616	5339131	DIODE 1SS254
D 619	5339131	DIODE 1SS254
D 620	5339131	DIODE 1SS254
D 621	5339131	DIODE 1SS254
D 622	5339131	DIODE 1SS254
D 623	5339131	DIODE 1SS254
D 624	5339131	DIODE 1SS254
D 625	5339131	DIODE 1SS254
D 626	5339131	DIODE 1SS254
D 627	5339131	DIODE 1SS254
D 628	5339131	DIODE 1SS254
D 629	5339131	DIODE 1SS254
D 630	5339131	DIODE 1SS254
D 631	5339131	DIODE 1SS254
D 633	5339131	DIODE 1SS254
D 701	5339131	DIODE 1SS254
D 702	5339131	DIODE 1SS254
D 703	5339131	DIODE 1SS254
D 704	5339131	DIODE 1SS254
D 705	5339131	DIODE 1SS254
D 706	5339131	DIODE 1SS254
D 707	5339131	DIODE 1SS254
D 708	5339131	DIODE 1SS254
D 709	5339131	DIODE 1SS254
D 711	5339131	DIODE 1SS254
D 713	5339131	DIODE 1SS254
D 714	5332782	DIODE 1SS254
D 715	5332782	DIODE 1SS254
D 716	5339131	DIODE 1SS254
D 718	5339131	DIODE 1SS254
D 719	5339131	DIODE 1SS254
D 721	5339131	DIODE 1SS254
D 722	5339131	DIODE 1SS254
D 726	5339131	DIODE 1SS254
D 734	5339131	DIODE 1SS254
D 735	5339131	DIODE 1SS254
D 736	5339131	DIODE 1SS254
D 739	5339131	DIODE 1SS254
D 740	5339131	DIODE 1SS254
D 751	5381662	DIODE 34MT3-F
D 752	5381214	LED SEL2213E
D 753	5381214	LED SEL2213E
D 754	5381211	LED SEL2213C
D 755	5381214	LED SEL2213E
D 757	5380691	LED SLR34UR5
D 758	5381211	LED SEL-2213C
D 801	5339131	DIODE 1SS254
D 802	5339231	DIODE 1SR35-100A
D 803	5339231	DIODE 1SR35-100A
⚠ D 851	5333351	DIODE D3SBA10
⚠ D 852	5331921	DIODE S1WB10
⚠ D 853	5333351	DIODE D3SBA10
D 854	5339131	DIODE 1SS254
D 855	5339131	DIODE 1SS254
⚠ D 856	5339231	DIODE 1SR35-100A
⚠ D 857	5339231	DIODE 1SR35-100A
D 858	5339231	DIODE 1SR35-100A
D 859	5339231	DIODE 1SR35-100A
D 860	5339131	DIODE 1SS254
D 902	5339131	DIODE 1SS254
D 903	5339131	DIODE 1SS254
D 904	5339131	DIODE 1SS254
D 905	5339131	DIODE 1SS254
D 906	5339131	DIODE 1SS254
D 907	5339131	DIODE 1SS254
D 908	5339131	DIODE 1SS254
D 909	5339131	DIODE 1SS254
D 910	5339131	DIODE 1SS254
D 913	5339131	DIODE 1SS254
D 914	5339131	DIODE 1SS254
D 915	5339131	DIODE 1SS254
D 916	5339131	DIODE 1SS254
D 917	5339131	DIODE 1SS254
D 918	5339131	DIODE 1SS254
D 919	5339131	DIODE 1SS254
D 920	5339131	DIODE 1SS254
D 921	5339131	DIODE 1SS254
D 922	5339131	DIODE 1SS254
D 923	5339131	DIODE 1SS254
D 924	5339131	DIODE 1SS254
D1401	5339131	DIODE 1SS254
D1402	5339131	DIODE 1SS254
D1490	5339171	DIODE 1SS130M
D1491	5339171	DIODE 1SS130M
D1492	5339171	DIODE 1SS130M
D1493	5339171	DIODE 1SS130M
D1494	5332541	DIODE ERA81-004P
D1495	5332541	DIODE ERA81-004P
D1501	5339131	DIODE 1SS254
D1502	5339131	DIODE 1SS254
D1503	5339131	DIODE 1SS254
D1505	5339131	DIODE 1SS254
D1506	5339131	DIODE 1SS254
D1581	5339131	DIODE 1SS254
D1801	5339131	DIODE 1SS254
D2201	5328301	DIODE MA151WK (MT)
D2202	5328301	DIODE MA151WK (MT)
D2203	5328321	DIODE MA151K (MH)
D2204	5328301	DIODE MA151WK (MT)
D2205	5328321	DIODE MA151K (MH)
D2206	5328301	DIODE MA151WK (MT)
D2207	5332781	DIODE 1SS254
D2208	5332781	DIODE 1SS254
D2301	5328302	DIODE MA151WA(MN)
D2302	5328302	DIODE MA151WA(MN)
D2303	5328321	DIODE MA151K (MH)
D2304	5328321	DIODE MA151K (MH)
D2305	5328321	DIODE MA151K (MH)
D2306	5328321	DIODE MA151K (MH)
D2701	5339131	DIODE 1SS254
D2705	5339131	DIODE 1SS254
D2706	5339131	DIODE 1SS254
D2707	5339131	DIODE 1SS254
IC 141	5391282	IC DN6851HI
IC 142	5391282	IC DN6851HI
IC 201	5388836	IC HT4927E
IC 202	5388734	IC HN7131C
IC 203	1370881	IC HN7124
IC 204	1378023	PWB ASSY VIDEO EQUALIZER(HN7129B)
IC 205	1387703	PWB ASSY V-SUG COMPE.(HES8044B)
IC 206	1380113	PWB ASSY REC OSD(HES8068B)
IC 207	5721803	IC PROTECTOR(1CP-N10)
IC 212	5721802	IC PROTECTOR(2CP-N5)
IC 301	5388844	IC HT4909C
IC 351	1380212	PWB ASSY SECAM DET(HES8074A)
IC 352	1341921	IC BA7267S
IC 401	5300671	IC BA7720S

SYMBOL-NO	P-NO	DESCRIPTION
IC 402	5300702	IC M51131L
IC 403	5369181	IC M5218L
IC 405	5369181	IC M5218L
IC 451	5369181	IC M5218L
IC 452	5369181	IC M5218L
IC 501	1341881	IC HA12139N
IC 502	5300641	IC BA7755
IC 503	5300871	IC HA12118N
IC 504	5367771	IC BA4558D
IC 507L	5366981	IC M5201L
IC 507R	5366981	IC M5201L
IC 509	5367771	IC BA4558D
IC 601	1341851	IC HD49726NT
IC 602	5300821	IC M54874P
IC 603	5355582	IC HA13403V
IC 605	1387231	MODULE BX7506
IC 606	1341693	IC NJM2233BSA
IC 701	5302351	IC M50955-679SP
IC 702	5301281	IC M58630P
IC 703	5361942	IC S-8053ALB
IC 771	5369181	IC M5218L
IC 801	1380263	PWB ASSY FS(HES8457B)
IC 802	5364303	IC NJM78M05E
IC 803	5721941	IC PROTECTOR
IC 804	5721941	IC PROTECTOR
IC 851	5300452	IC STK5372H
IC 852	5367853	IC L780S05LC
IC 853	1341651	IC M5279L06
IC 901	5302823	IC HD4074008A03S
IC 902	5300794	IC BA6209U4
IC 903	1387951	PWB ASSY TAPE END DET(BX7552)
IC1401	1380471	PWB ASSY OSD(PLT-623-0008)
IC1404	1380561	PWB ASSY OSD MIX(HES8077)
IC1405	1387703	PWB ASSY V-SAG COMPE.(HES8044B)
IC1406	1387912	PWB ASSY HES8052A FOR VT-S85E(VPS)
IC1490	5721802	IC PROTECTOR
IC1492	5364602	IC M5278L56
IC1493	5721941	IC PROTECTOR
IC1501	1342531	IC BA7604N
IC1502	1342031	IC NJM2248S
IC1550	5369431	IC LA7016
IC1801	1380481	PWB ASSY DEMODULATOR(MIC3803)
IC2201	1342291	IC HA118083
IC2202	1380681	PWB ASSY Y/C SEPARATE CCD(MS736)
IC2203	1342191	IC AN6308
IC2204	1341691	IC NJM2234S
IC2205	1342191	IC AN6308
IC2301	1340041	IC HA118070
IC2302	5366171	IC BA7023L
IC2303	1342771	IC HA118099NT
IC2304	1340041	IC HA118070
IC2305	5359981	IC MPD4030BC
IC2306	5365601	IC UPD4013BC
IC2307	5361482	IC UPD4538BC
IC2308	5362211	IC HD14053BP
IC2309	1380601	PWB ASSY SKEW COMPE CCD(PLT6230)
IC2310	5721802	IC PROTECTER(ICP-N5)
IC2701	5306464	IC HD4074008F
Q 141	5324661	TRANSISTOR PT481F
Q 142	5324661	TRANSISTOR PT483F
Q 201	5324631	TRANSISTOR 2SA1390C
Q 202	5327073	TRANSISTOR DTC144ES
Q 203	5324631	TRANSISTOR 2SA1390
Q 204	5321214	TRANSISTOR 2SD468
Q 205	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)

SYMBOL-NO	P-NO	DESCRIPTION
Q 207	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 210	5327073	TRANSISTOR DTC144ES
Q 211	5327073	TRANSISTOR DTC144ES
Q 212	5327073	TRANSISTOR DTC144ES
Q 213	5324641	TRANSISTOR 2SA1374C
Q 214	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 215	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 216	5327073	TRANSISTOR DTC144ES
Q 217	5327074	TRANSISTOR DTA144ES
Q 218	5327073	TRANSISTOR DTC144ES
Q 219	5327074	TRANSISTOR DTA144ES
Q 220	5327073	TRANSISTOR DTC144ES
Q 221	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 222	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 223	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 224	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 225	5327073	TRANSISTOR DTC144ES
Q 226	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 227	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 229	5327073	TRANSISTOR DTC144ES
Q 301	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 302	5327073	TRANSISTOR DTC144ES
Q 303	5327073	TRANSISTOR DTC144ES
Q 304	5327073	TRANSISTOR DTC144ES
Q 305	5327073	TRANSISTOR DTC144ES
Q 306	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 307	5327062	TRANSISTOR DTC144ES
Q 351	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 352	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 353	5327073	TRANSISTOR DTC144ES
Q 354	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 401L	5327063	TRANSISTOR 2SC1740(S,RS)
Q 401R	5327063	TRANSISTOR 2SC1740(S,RS)
Q 402	5327063	TRANSISTOR 2SC1740(S,RS)
Q 403L	5327111	TRANSISTER 2SC2784E
Q 403R	5327111	TRANSISTER 2SC2784E
Q 404	5327084	TRANSISTOR RT1P441S
Q 405L	5327111	TRANSISTER 2SC2784E
Q 405R	5327111	TRANSISTER 2SC2784E
Q 501	5327073	TRANSISTOR DTC144ES
Q 502	5327031	TRANSISTOR 2SA673C
Q 508	5327073	TRANSISTOR DTC144ES
Q 509	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q 513	5327073	TRANSISTOR DTC144ES
Q 516	5327021	TRANSISTOR 2SA844CD
Q 517	5327141	TRANSISTOR 2SD468C
Q 518	5327021	TRANSISTOR 2SA844CD
Q 519	5327111	TRANSISTER 2SC2784E
Q 523	5327073	TRANSISTOR DTC144ES
Q 525	5327073	TRANSISTOR DTC144ES
Q 526	5327073	TRANSISTOR DTC144ES
Q 616	5327063	TRANSISTOR 2SC1740(S,RS)
Q 617	5327063	TRANSISTOR 2SC1740(S,RS)
Q 618	5327063	TRANSISTOR 2SC1740(S,RS)
Q 619	5323421	TRANSISTOR 2SD1276
Q 621	5327063	TRANSISTOR 2SC1740(S,RS)
Q 701	5327063	TRANSISTOR 2SC1740(S,RS)
Q 704	5327063	TRANSISTOR 2SC1740(S,RS)
Q 801	5324631	TRANSISTOR 2SA1390C
Q 802	5322833	TRANSISTOR 2SA933S-R
Q 851	5327231	TRANSISTOR 2SC1741QR
Q 852	5327231	TRANSISTOR 2SC1741QR
Q 901	5327091	TRANSISTER 2SD1504E
Q1401	5324631	TRANSISTOR 2SA1390C
Q1402	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)

SYMBOL-NO	P-NO	DESCRIPTION
Q1403	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q1409	5327073	TRANSISTOR DTC144ES
Q1490	5327031	TRANSISTOR 2SA673C
Q1503	5327031	TRANSISTOR 2SA673C
Q1504	1320012	TRANSISTOR 2SA933 (S,R)
Q1505	5327031	TRANSISTOR 2SA673C
Q1506	1320012	TRANSISTOR 2SA933(SR)
Q1550	5324631	TRANSISTOR 2SA1390C
Q1551	5327031	TRANSISTOR 2SA673C
Q1581	5327062	TRANSISTOR 2SC1740SR(2SC1740S OR R)
Q2201	5328971	TRANSISTOR 2SC2412KR(BR)
Q2202	5328961	TRANSISTOR 2SA1037KS(FS)
Q2203	5328961	TRANSISTOR 2SA1037KS(FS)
Q2204	5328793	TRANSISTOR DTC144K-26
Q2205	5328971	TRANSISTOR 2SC2412KR(BR)
Q2206	5328961	TRANSISTOR 2SA1037KS(FS)
Q2207	5328791	TRANSISTOR DTC124K(25)
Q2208	5328971	TRANSISTOR 2SC2412KR(BR)
Q2209	5328971	TRANSISTOR 2SC2412KR(BR)
Q2210	5328793	TRANSISTOR DTC144K-26
Q2211	5328793	TRANSISTOR DTC144K-26
Q2212	5328971	TRANSISTOR 2SC2412KR(BR)
Q2213	5328971	TRANSISTOR 2SC2412KR(BR)
Q2214	5328793	TRANSISTOR DTC144K-26
Q2215	5328961	TRANSISTOR 2SA1037KS(FS)
Q2216	5328961	TRANSISTOR 2SA1037KS(FS)
Q2217	5328961	TRANSISTOR 2SA1037KS(FS)
Q2218	5328971	TRANSISTOR 2SC2412KR(BR)
Q2219	5328971	TRANSISTOR 2SC2412KR(BR)
Q2220	5326491	TRNSISTOR IMX1(X1)
Q2221	5328971	TRANSISTOR 2SC2412KR(BR)
Q2222	5328971	TRANSISTOR 2SC2412KR(BR)
Q2223	5328793	TRANSISTOR DTC144K-26
Q2224	5328793	TRANSISTOR DTC144K-26
Q2225	5328793	TRANSISTOR DTC144K-26
Q2226	5328793	TRANSISTOR DTC144K-26
Q2301	5328793	TRANSISTOR DTC144K-26
Q2302	5328791	TRANSISTOR DTC124K(25)
Q2303	5328971	TRANSISTOR 2SC2412KR(BR)
Q2304	5328793	TRANSISTOR DTC144K-26
Q2305	5324631	TRANSISTOR 2SA1390C
Q2306	5328793	TRANSISTOR DTC144K-26
Q2307	5322731	TRANSISTOR 2SA952
QR 601	5327073	TRANSISTOR DTC144ES
QR 602	5327073	TRANSISTOR DTC144ES
QR 603	5327073	TRANSISTOR DTC144ES
QR 604	5327074	TRANSISTOR DTA144ES
QR 605	5327073	TRANSISTOR DTC144ES
QR 606	5327073	TRANSISTOR DTC144ES
QR 607	5327073	TRANSISTOR DTC144ES
QR 608	5327073	TRANSISTOR DTC144ES
QR 609	5327073	TRANSISTOR DTC144ES
QR 610	5327073	TRANSISTOR DTC144ES
QR 611	5327073	TRANSISTOR DTC144ES
QR 612	5327073	TRANSISTOR DTC144ES
QR 613	5327073	TRANSISTOR DTC144ES
QR 614	5327073	TRANSISTOR DTC144ES
QR 615	5327073	TRANSISTOR DTC144ES
QR 620	5327073	TRANSISTOR DTC144ES
QR 701	5327084	TRANSISTOR RT1P441S
QR 702	5327082	TRANSISTOR RT1N441S
QR 703	5327082	TRANSISTOR RT1N441S
QR 801	5327073	TRANSISTOR DTC144ES
QR 802	5327073	TRANSISTOR DTC144ES
QR 901	5327073	TRANSISTOR DTC144ES

SYMBOL-NO	P-NO	DESCRIPTION
QR 902	5327073	TRANSISTOR DTC144ES
QR 903	5327073	TRANSISTOR DTC144ES
QR 904	5327073	TRANSISTOR DTC144ES
QR 905	5327073	TRANSISTOR DTC144ES
QR1404	5327073	TRANSISTOR DTC144ES
QR1405	5327073	TRANSISTOR DTC144ES
QR1406	5327073	TRANSISTOR DTC144ES
QR1501	5327074	TRANSISTOR DTA144ES
QR1502	5327073	TRANSISTOR DTC144ES
QR1503	5327073	TRANSISTOR DTC144ES
QR1504	5327074	TRANSISTOR DTA144ES
QR1581	5327071	TRANSISTOR DTC124ES
QR1801	5327073	TRANSISTOR DTC144ES
QR1802	5327073	TRANSISTOR DTC144ES
QR1803	5327073	TRANSISTOR DTC144ES
QR1804	5327073	TRANSISTOR DTC144ES
QR1805	5327073	TRANSISTOR DTC144ES
QR2701	5323563	TRANSISTOR DTC144F
ZD 201	5339273	DIODE HZS11A3
ZD 401	5339272	DIODE HZS6-A3
ZD 402	5339272	DIODE HZS6-A3
ZD 501	5339271	DIODE HZS9A2
ZD 502	5339271	DIODE HZS9A2
ZD 601	5339274	DIODE HZS15-3
ZD 701	5330322	DIODE HZ9B
ZD 702	5331588	DIODE RD2.7E-B2
ZD 703	5330312	DIODE HZ7B SI ZENER 1MHZ 0.4W
ZD 851	5339101	DIODE HZ7B
ZD 852	5339101	DIODE HZ7B
ZD 901	5339271	DIODE HZS9A2
ZD 902	5339262	DIODE HZS6-C2
ZD 903	5339262	DIODE HZS6-C2
ZD 904	5339262	DIODE HZS6-C2
ZD1490	5339256	DIODE HZS30
		TRANSFORMERS
T 501	5261352	OSC COIL
T 502	5261351	COIL,OSC
		COILS
L 201	5159077	CHOKE COIL 100UH+-10%
L 202	5159154	CHOKE COIL 100UH
L 203	5121175	COIL 22UH
L 204	5159077	CHOKE COIL 100UH+-10%
L 206	5121182	CHOKE COIL 68UH
L 208	5159077	CHOKE COIL 100UH+-10%
L 209	5121173	COIL 15UH
L 211	5121174	COIL 18UH
L 213	5159081	CHOKE COIL 180UH
L 214	5153034	CHOKE COIL 18UH
L 215	5121178	CHOKE COIL 39UH
L 216	5159077	CHOKE COIL 100UH+-10%
L 217	5121176	COIL 27UH
L 218	5121178	CHOKE COIL 39UH
L 219	5121176	COIL 27UH
L 220	5153031	CHOKE COIL 10UH
L 221	5159077	CHOKE COIL 100UH+-10%
L 223	5159077	CHOKE COIL 100UH+-10%
L 225	5121179	CHOKE COIL 47UH
L 226	5152607	CHOKE COIL 100UH
L 301	5159089	CHOKE COIL 820UH+-10%
L 302	5159115	COIL 2200UH
L 303	5153012	CHOKE COIL 68UH

SYMBOL–NO	P–NO	DESCRIPTION
L 304	5159143	CHOKE COIL 15UH
L 305	5159077	CHOKE COIL 100UH+-10%
L 306	5159113	COIL,CHOKE 8.2MH
L 307	5159077	CHOKE COIL 100UH+-10%
L 308	5159077	CHOKE COIL 100UH+-10%
L 310	5159158	CHOKE COIL 220UH
L 351	5159156	CHOKE COIL 150UH
L 352	5159111	CHOKE COIL 8.2UH
L 353	5159077	CHOKE COIL 5.6M+-10%
L 354	5159077	CHOKE COIL 100UH+-10%
L 401L	5130421	COIL
L 401R	5130421	COIL
L 501	5159077	CHOKE COIL 100UH+-10%
L 502	5159114	COIL 15MH
L 503	5159114	COIL 15MH
L 504	5159081	CHOKE COIL 180UH
L 505	5159154	CHOKE COIL 100UH
L 506	5159111	CHOKE COIL 5600UH
L 702	5152349	CHOKE COIL 820UH
⚠ L 851	5273341	LINE FILTER
L 901	5159077	CHOKE COIL 100UH+-10%
L1401	5159077	CHOKE COIL 100UH+-10%
L1402	5159085	CHOKE COIL 390UH
L1403	5159077	CHOKE COIL 100UH+-10%
L1404	5121177	CHOKE COIL 33UH
L1405	5159077	CHOKE COIL 100UH+-10%
L1501	5159077	CHOKE COIL 100UH+-10%
L1502	5159077	CHOKE COIL 100UH+-10%
L1503	5159077	CHOKE COIL 100UH+-10%
L1504	5159077	CHOKE COIL 100UH+-10%
L2201	5159077	CHOKE COIL 100UH+-10%
L2202	5159077	CHOKE COIL 100UH+-10%
L2203	5159141	CHOKE COIL 10UH
L2204	5153012	CHOKE COIL 68UH
L2205	5159077	CHOKE COIL 100UH+-10%
L2206	5159051	COIL,CHOKE 1UH+-10%
L2302	5159077	CHOKE COIL 100UH+-10%
L2303	5159077	CHOKE COIL 100UH+-10%
L2304	5159077	CHOKE COIL 100UH+-10%
L2305	5159077	CHOKE COIL 100UH+-10%
L2306	5159077	CHOKE COIL 100UH+-10%
L2307	5159149	CHOKE COIL 47UH
L2308	5159137	CHOKE COIL 5.6UH+-10%
L2309	5159137	CHOKE COIL 5.6UH+-10%
L2310	5159149	CHOKE COIL 47UH
		CRYSTALS
X 701	5781581	CRYSTAL
X 702	5783001	CRYSTAL
X2701	5781981	CRYSTAL 8.0MHZ
CE 901	5781981	CRYSTAL 8.0MHZ
		MISCELLANEOUS
BL 501	5272375	LINE FILTER
BL 502	5272375	LINE FILTER
BL 503	5272375	LINE FILTER
BL 504	5272375	LINE FILTER
BL1401	0239055	LINE FILTER
BL1402	0239055	LINE FILTER
BL1403	5272372	CORE
BZ1501	5409272	BUZZER
CP 201	5163951	LC FILTER
CP 202	5164731	LC FILTER

SYMBOL–NO	P–NO	DESCRIPTION
CP 203	5163801	LC FILTER
CP 204	5163834	LC FILTER
CP 205	5163912	LC FILTER
CP 206	5163941	LC FILTER
CP 207	5163913	LC FILTER
CP 301	5785388	DELAY LINE
CP 302	5164702	LC FILTER
CP 303	5164711	FILTER
CP 304	5164701	LC FILTER
CP 401L	5163021	LOW PASS FILTER
CP 401R	5163021	LOW PASS FILTER
CP 502	5163103	BAND PASS FILTER
CP 503	5163104	BAND PASS FILTER
CP 504	5163103	BAND PASS FILTER
CP1501	5163204	COIL
CP2201	5163863	LC FILTER
CP2202	5163835	LC FILTER
CP2203	5163901	LC FILTER
CP2204	5163933	LC FILTER
CP2205	5163863	LC FILTER
CP2208	5163314	FILTER
DG 701	5315031	INDICATOR TUBE
⚠ F 850	5720179	FUSE 1A
⚠ F 851	5721064	FUSE 2.5A
⚠ F 852	5721061	FUSE 1.6A
⚠ F 853	5720171	FUSE 315MA
⚠ F 855	5720171	FUSE 315MA
IR 701	5477541	MODULE GP1U521H
J 701	5673761	JACK
J1501	5691001	CONNECTOR
J1502	5694611	CONNECTOR
JK1251	5677451	MINI CONNECTOR
JK1252	5677461	MINI CONNECTOR
LV 701	5317102	LEVEL METER
PH2301	5340365	THERMISTOR ERT-D2FGL332G
PH2302	5340365	THERMISTOR ERT-D2FGL332G
PH2303	5340365	THERMISTOR ERT-D2FGL332G
S 141	5635321	SWITCH
S 142	5635331	SWITCH
S 143	5601371	SWITCH
S 701	5635061	SWITCH
S 702	5635061	SWITCH
S 703	5635061	SWITCH
S 704	5635061	SWITCH
S 705	5635061	SWITCH
S 706	5635061	SWITCH
S 707	5635061	SWITCH
S 710	5635061	SWITCH
S 711	5635061	SWITCH
S 712	5635061	SWITCH
S 713	5635061	SWITCH
S 714	5635061	SWITCH
S 715	5635061	SWITCH
S 716	5635061	SWITCH
S 718	5635061	SWITCH
S 719	5635061	SWITCH FOR VT-S85E(VPS)
S 721	5635061	SWITCH
S 722	5635061	SWITCH
S 723	5635061	SWITCH
S 724	5635061	SWITCH
S 725	5635061	SWITCH
S 726	5635061	SWITCH
S 728	5635061	SWITCH
S 737	5635061	SWITCH
S 751	5635061	SWITCH

SYMBOL–NO	P–NO	DESCRIPTION	SYMBOL–NO	P–NO	DESCRIPTION
S 752	5622183	SWITCH			
S 755	5621441	SWITCH			
S 756	5622183	SWITCH			
S 757	5622183	SWITCH			
S 758	5622183	SWITCH			
S1501	5622562	SWITCH			
S1502	5622562	SWITCH			
TH 201	5340361	THERMISTOR ERTD2FHL			
TH 202	5340363	THERMISTOR ERTD2FHL			
TH 203	5340363	THERMISTOR ERTD2FHL			

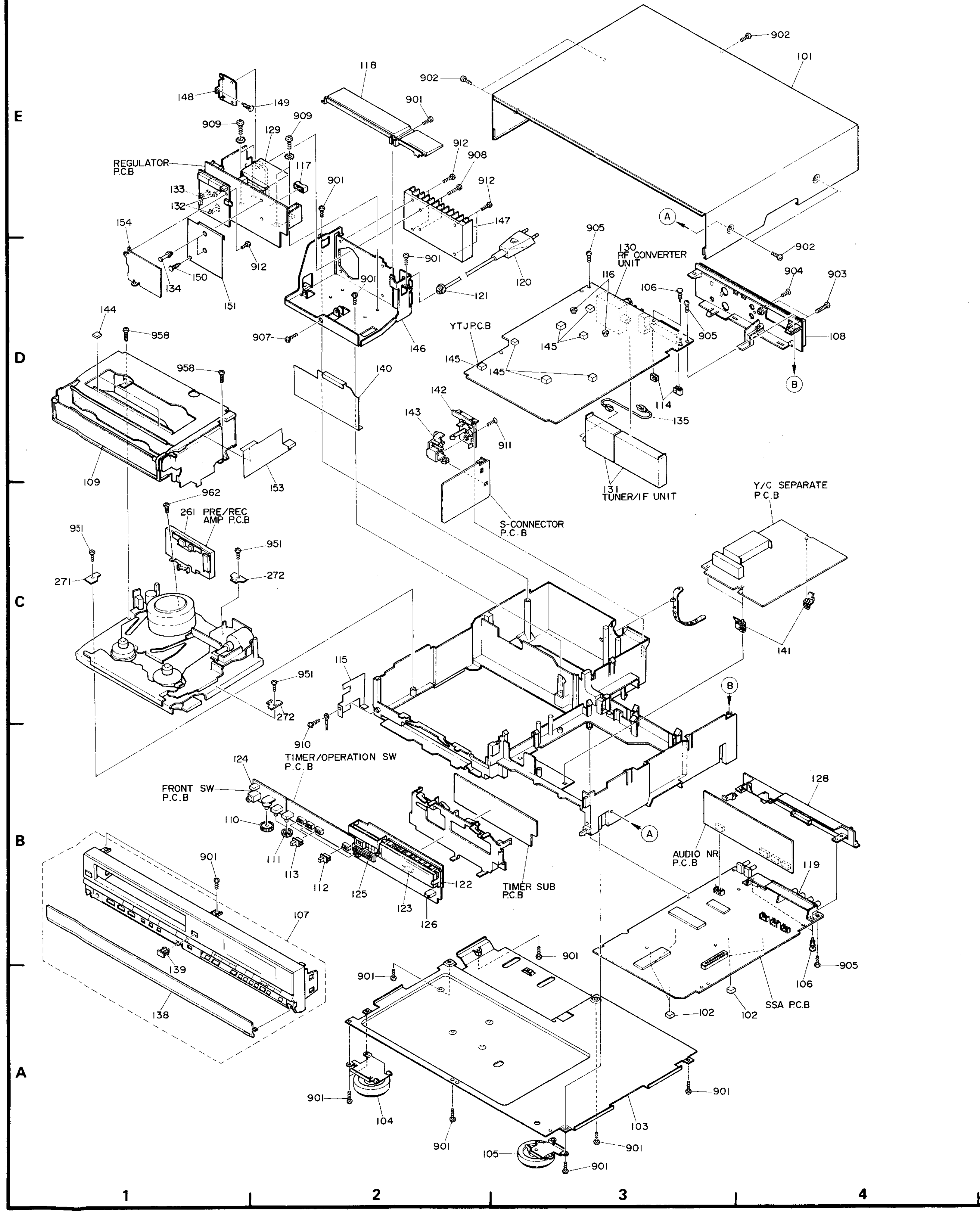
MECHANICAL PARTS LIST (LISTE DER MECHANISHEN TEILE)

SYMBOL–NO	P–NO	DESCRIPTION
		FOR FINAL ASSEMBLY
101	6003485	COVER,TOP
102	7741443	FELT
103	6003503	COVER,BOTTOM
104	6064752	INSULATOR(L)
105	6064762	INSULATOR(R)
106	6714211	NYLON RIVET - 3MMD
107	6232625	PANEL,FRONT(CT)
107	6232626	PANEL,FRONT(VPS)
108	6230255	PANEL,REAR
109	6248531	DOOR,CASSETTE
110	6077291	ROTARY KNOB
111	6077293	KNOB
112	6078481	KNOB,SLIDE
113	6078931	KNOB,SLIDE
114	7417001	BRACKET
115	7448441	BRACKET
116	6800971	STUD
117	6407471	COVER,FUSE
118	6231081	PIECE,REAR
119	5690315	PLATE,JACK
⚠ 120	5850722	CORD
⚠ 121	6794591	BUSHING
122	6800781	HOLDER,DISPLAY
123	6869311	COVER
124	6800201	HOLDER,LED
125	6229772	HOLDER,LED
126	6878962	HOLDER
128	6234201	PANEL,REAR
⚠ 129	5214052	TRANSFORMER,POWER
130	5589112	RF CONVERTER
131	5588062	TUNER IF BLOCK
132	6800081	CBA SUPPORT
133	6800091	CBA SUPPORT
134	6800092	SUPPORTER,PWB
135	5885982	CABLE,PLUG
138	6231716	DOOR,CONTROL(CT)
138	6231718	DOOR,CONTROL(VPS)
139	6063641	BUTTON,EJECT
140	7493692	SHIELD PLATE
141	6809461	HOLDER
142	6800951	PLATE,JACK
143	6800961	BRACKET
144	7741446	FELT
145	7674011	CUSHION
146	7793732	HOLDER,TRANSFORMER
147	6675023	HEAT SINK
148	7417402	BRACKET
149	6795151	RIVET
150	6714215	NYLON RIVET
151	7798451	PLATE,SHIELD
153	7707661	COVER
154	7425781	PLATE
202	6911101	SCREW
203	7412852	BASE-ACE HEAD
204	5446631	HEAD-AUDIO CONTROL
205	6304906	SPRING
206	6522752	SPRING
207	7785673	NUT
208	6896914	HOLDER
209	6555501	SPRING
210	6415532	REEL,SUPPLY
211	7789123	POLYSLIDER WASHER
212	6415542	REEL-TAKE UP
213	7789122	POLYSLIDER WASHER
214	6975766	ARM,PRESSER ROLLER
215	6804274	SLIDER BLOCK
217	7412816	GEAR,LOADING (L)
218	7412806	GEAR,LOADING (R)
219	6911551	GUIDE ROLLER BASE(IN)
220	7412822	PLATE
221	6911572	BRACKET
222	6911002	BASE,CYLINDER
223	5446641	HEAD-FULL ERASE
224	6897475	ARM, IMPEDANCE
225	4508237	GUIDE,TAPE
226	6555431	SPRING
227	7413665	HOLDER-BAND
228	7412863	ARM
229	6555444	SPRING
230	6897264	HOLDER
231	6896751	ARM
232	6555061	SPRING
233	4508235	GUIDE
235	7429684	BLOCK,LOADING
236	7428085	BRCKET
237	7412881	ARM
238	6976551	ARM
239	7412892	ARM
240	7428072	ARM,OPERATION
242	6551151	SPRING
243	6804791	BRAKE
244	6896894	HOLDER,MOTOR
246	6897251	ARM
247	6555483	SPRING
248	6897271	ARM
249	6897065	GEAR,MODE
250	6434861	WORM WHEEL
251	6555052	SPRING
252	7799012	WASHER
253	7786623	POLYSLIDER WASHER
254	6898472	ARM,IDLE
255	6976371	ARM
256	5601371	SWITCH
257	8711104	SCREW(2X4)
261	1378092	PWB ASSY PRE-REC AMP
271	7415782	BRACKET
272	7415793	BRACKET
301	5571382	MOTOR,CAPSTAN
302	6896951	CLUTCH BASE ASSY
303	6351555	BELT
304	6897095	ARM,FF/REW
305	6434851	RACK
402	7412575	BRACKET,SIDE(R)
403	6804542	BRACKE,SIDE(R)
404	6896971	WORM WHEEL ASSY
405	6435571	WORM
406	4508221	WORM SHAFT
407	6896632	ARM-SWITCH
408	6897041	ARM-SWITCH
409	6302474	SPRING
410	6896623	ARM,DOOR
411	7412583	BRACKET-GEAR
412	7449172	HOLDER,CASSETTE
413	7449162	BASE,CASSETTE HOLDER
414	6896664	HOLDER,CASSETTE (R)
415	7428113	HOLDER,STAY
416	6806641	ARM

SYMBOL–NO	P–NO	DESCRIPTION	SYMBOL–NO	P–NO	DESCRIPTION
417	6897001	ARM			
418	6555043	SPRING			
419	6896673	HOLDER,CASSETTE (L)			
420	7412944	ARM			
421	6555771	SPRING			
422	7412952	SPRING			
423	6806521	HOLDER,FRONT			
424	7580791	SHAFT ASSY			
425	7428981	BRACKET,SIDE(L)			
426	6323724	SPRING			
427	7794391	WASHER			
501	5436089	CYLINDER ASSY			
503	5571602	MOTOR,CAPSTAN			
504	5792633	BRUSH			
901	8699410	SCREW(3X10)			
902	7784428	SCREW (M3)			
903	8744412	BINDING SCREW 3MMDX12MM			
904	7781582	FALT SCREW-3MMDX10MM(BLACK)			
905	8699412	SCREW (3X12) BLACK			
907	8691408	SCREW (3X8)			
908	8741416	BIND HEAD SCREW 3MMDX16MM			
909	7785351	SCREW (4X14)			
910	8691408	SCREW (3X8)			
911	7781581	SCREW			
912	8691410	SCREW (3X10)			
951	8691410	SCREW			
952	8691310	SCREW			
953	8699408	SCREW			
954	7781872	SCREW-3MMDX8MM			
955	7773086	SCREW			
956	8741414	SCREW (3X14)			
957	8691412	SCREW (3X12)			
958	8691408	SCREW (3X8)			
959	8741408	SCREW (B3X8)			
960	8741412	SCREW (B3X12)			
961	7785941	SCREW			
962	8711404	SCREW - 3X4 PAN HEADSCREW			
		FOR ACCESSORIES			
802	5857111	YC CABLE			
803	5858311	CONNECTION CODE			
804	5747741	CONNECTOR CORD			
805	5614183	REMOTE HAND SET			
		FOR REMOTE CONTROLLER UNIT			
1	5614061	COVER			
2	5614281	CASE,UPPER			
3	5614062	PLATE,CLEAR			
4	5614066	LID,BATTERY			
5	5614063	CASE,BOTTOM			

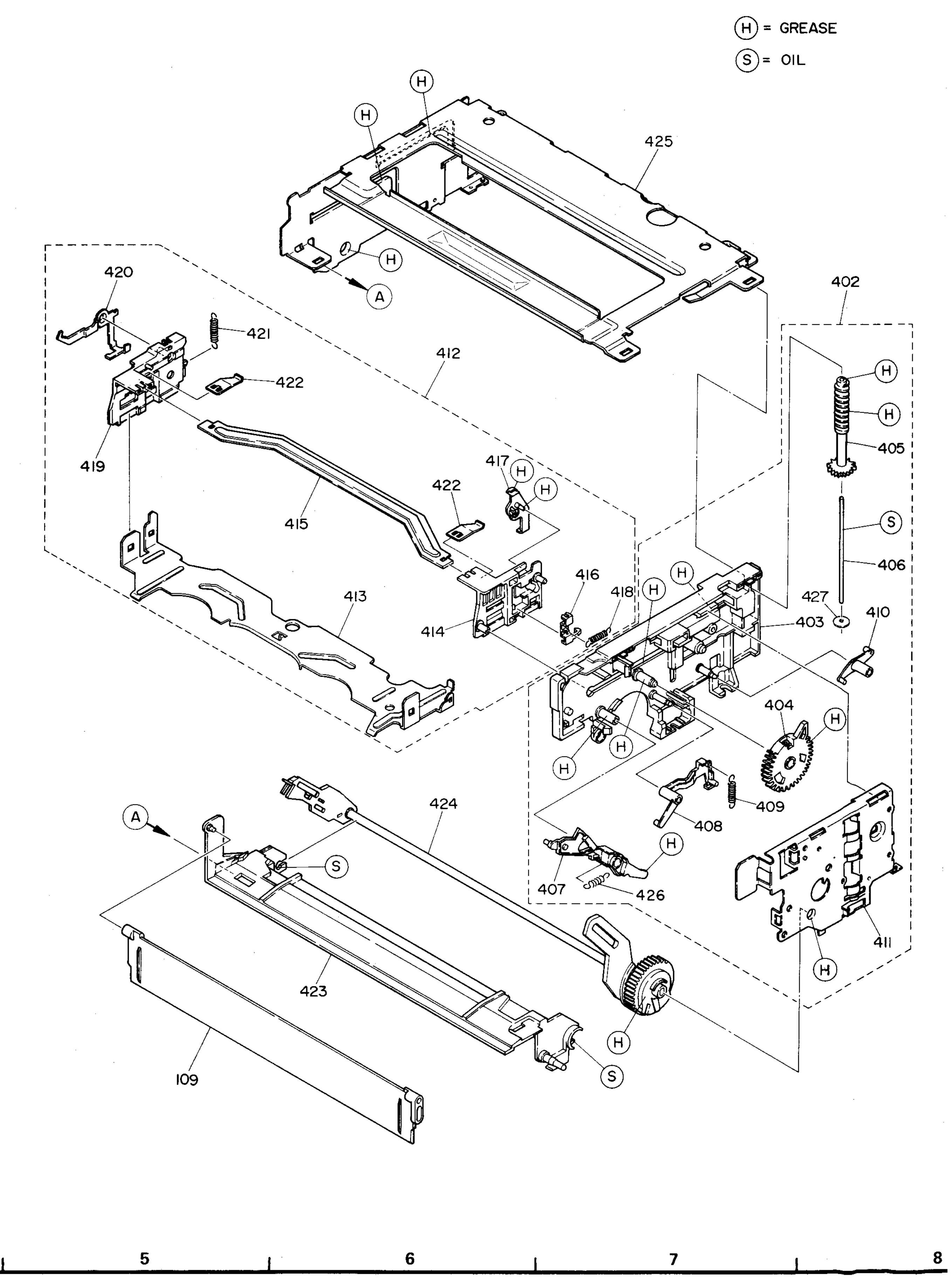
EXPLODED VIEWS (EXPLOSIONZEICHNUNGEN)

CABINET SECTION (GEHAUSEEINHEIT)



E
D
C
B
A
1
2
3
4
902
101
118
902
901
148
149
909
909
129
912
908
117
REGULATOR P.C.B
133
132
901
912
147
154
912
901
134
150
151
901
121
120
905
130 RF CONVERTER UNIT
116
106
904
903
902
A
144
958
907
146
YTJ P.C.B
145
145
145
905
108
958
140
142
143
911
114
135
B
109
153
131 TUNER/IF UNIT
S-CONNECTOR P.C.B
Y/C SEPARATE P.C.B
962
261 PRE/REC AMP P.C.B
951
951
271
272
141
115
951
272
910
B
TIMER/OPERATION SW P.C.B
124
FRONT SW P.C.B
128
110
111
113
112
125
123
126
122
TIMER SUB P.C.B
AUDIO NR P.C.B
119
A
901
107
139
138
901
901
905
106
SSA P.C.B
102
102
901
104
103
901
901
105
901

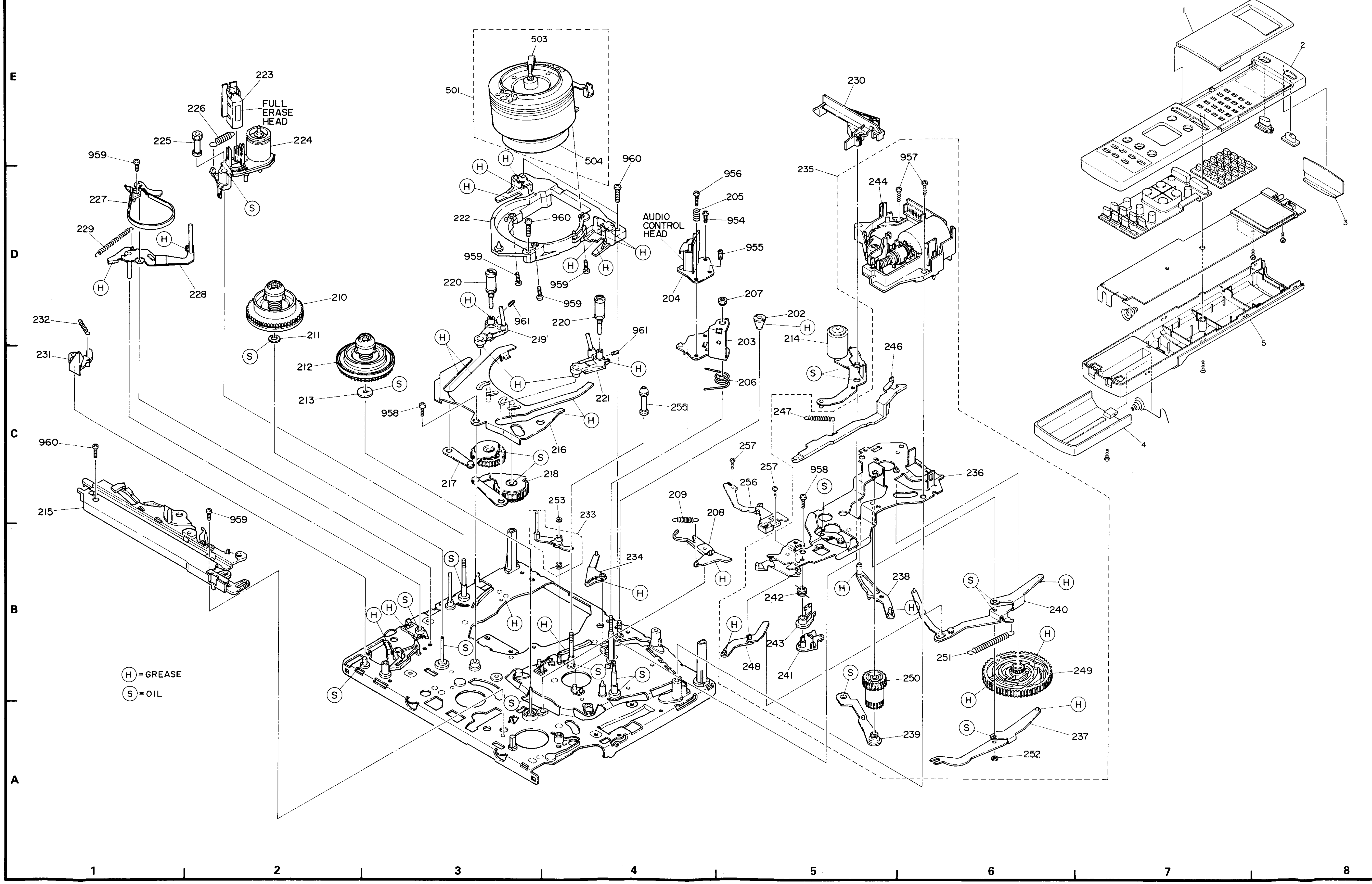
CASSETTE LOADING MECHANISM SECTION (CASSETTEN−LADEMECHANISMUS)



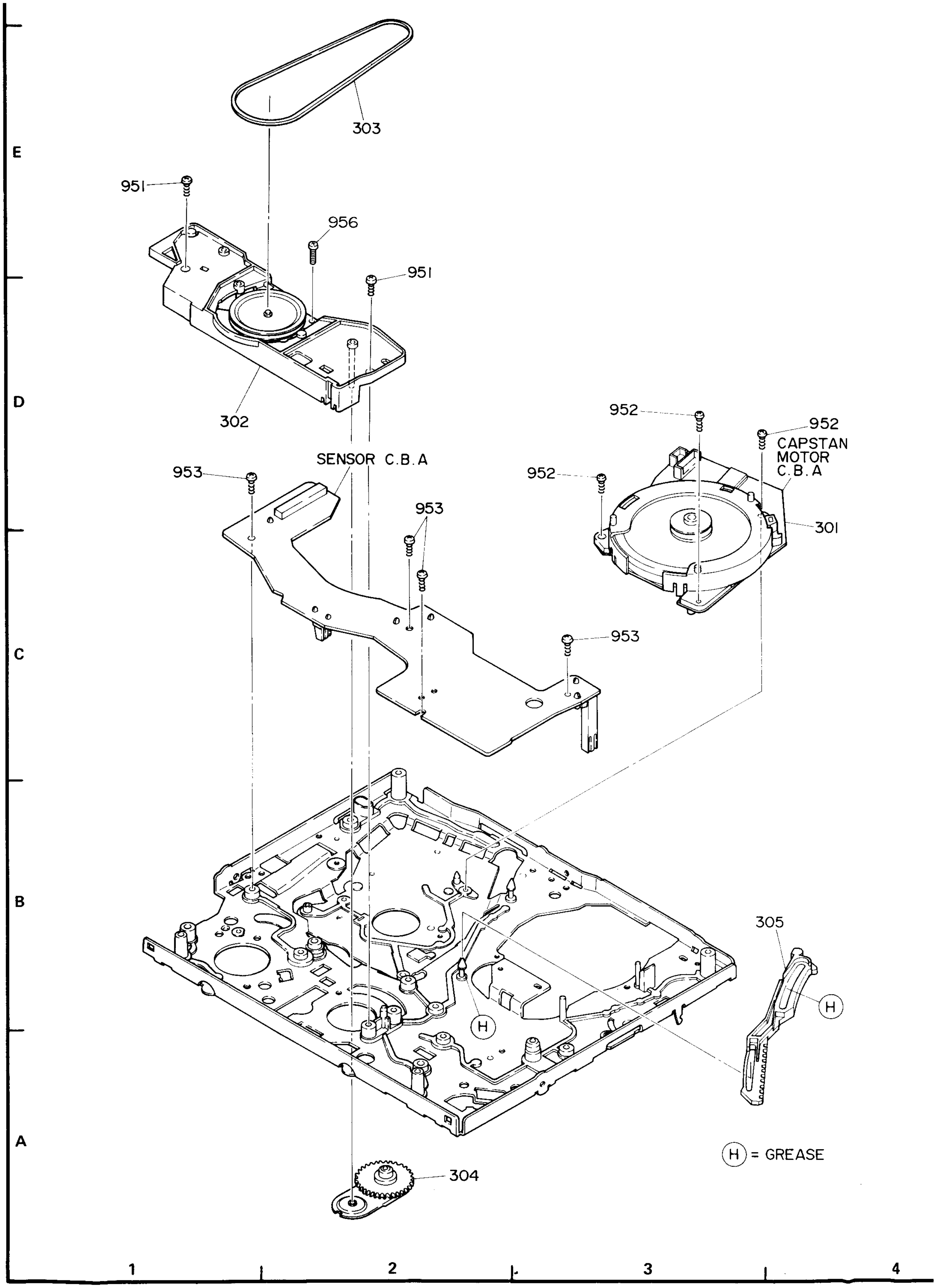
Ⓗ = GREASE
Ⓢ = OIL
H
425
A
402
420
421
422
412
419
415
422
417
405
406
413
414
416
418
403
427
410
404
409
408
407
426
424
423
109
411
S
5
6
7
8

CHASSIS (I) SECTION (CHASSIS I)

REMOTE CONTROL SECTION (FERNBEDIENUNG)


E
D
C
B
A
1
2
3
4
5
6
7
8
503
501
504
223
FULL ERASE HEAD
226
225
224
959
227
229
228
210
211
212
213
232
231
960
215
959
222
960
959
959
959
220
219
961
220
961
221
216
217
218
958
255
253
233
234
AUDIO CONTROL HEAD
956
205
954
955
204
207
203
206
202
214
209
208
230
235
957
244
246
247
257
257
256
958
236
238
242
243
241
248
240
251
249
250
239
237
252
H
S
H = GREASE
S = OIL
1
2
3
4
5

CHASSIS (II) SECTION (CHASSIS II)


303
E
951
956
951
D
302
952
952
CAPSTAN
MOTOR
C.B.A
SENSOR C.B.A
953
952
953
301
C
953
B
305
H
H
A
H = GREASE
304
1
2
3
4